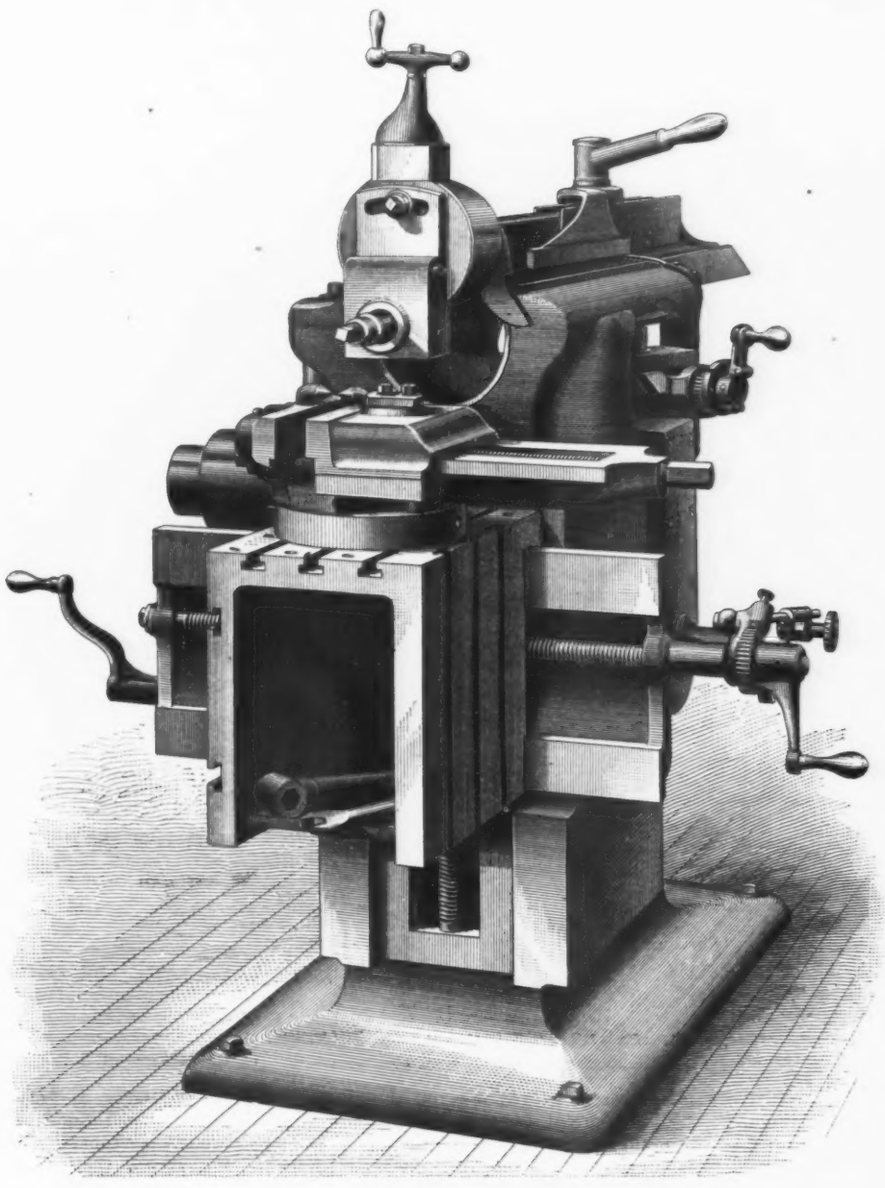
THE IRON AGE

THURSDAY, FEBRUARY 11, 1892.

The Juengst Crank Shaper.

Our illustrations represent a crank shaper built in seven sizes, 17, 24 and 28 inches stroke with beveled slides on the ram, and 12, 16, 22 and 26 inches stroke with square slides on the ram. The improvement in these shapers is designed to give the tool a nearly uniform movement while cutting, and a rapid return, and to provide also for regulating the extent of motion of the ram or cutter bar during the movement of the parts.



THE JUENGST CRANK SHAPER.

The cutter bar is operated from a worm wheel, running in oil, the construction being as follows: In Fig. 3 E represents the worm wheel, which runs loosely on the stud C. This wheel is provided with a pin, 2, and link, F, whose opposite end is connected to the swinging saddle lever G at 19. The latter is pivoted on a stud, 4, so that it swings by the action of the pin 2 and link F. Upon the lever G is a saddle, H, capable of being moved endwise upon the lever. The connecting rod I from the pivot 5 upon the saddle H to the point 6 is formed by the bolt passing through the slot in the ram or cutter bar and has a nut with a lever handle, 18, for clamping the bolt to the ram. The ram has the usual slot longitudinally, so that it can be brought to the desired point. This clamping bolt 6 passes through a hole in the flanged clamp plate K, Fig. 2, that rests over the slotted rib of the ram, and by the friction between this plate K and the ram under the action of the bolt 6 and the nut 7 a very firm and reliable connection is made between the bolt and ram.

In the pivoted saddle lever G there are twin screws L and O, right and left handed, and upon the end of the screw O is a crank handle, O′, by which it may be rotated, and there is a disk and pinion, M, fitted loosely on the arbor of the screw near the handle. The arbor of the screw L projects out of the end of the lever G and is provided with a pinion, 11, pinned thereon, this arrangement being as shown in Fig. 3. The pin N may be slipped endwise into a hole in gear disk M, corresponding to the pin in the handle O′, with the small check lever N′, thereby connecting the two screws, or by pressing on the lever N′ the pin N is withdrawn. At the underside the saddle H projects downward to form a nut, through which the screw L passes, as seen in Fig. 4, and the side of this nut portion is beveled so that a wedge, L′, may pass in between such nut and the inner edge of the saddle lever G. The screw O passes through this wedge, which is threaded to form a nut. It is now to be understood that when the handle O′ is rotated, with the pin N withdrawn, the screw O will draw the wedge out sufficiently to loosen the saddle, when, the pin being allowed to slip into the hole in the pinion disk M, both screws can be rotated to place the saddle at any desired point on the lever G. Then the pin is withdrawn and the wedge forced in between the saddle and lever to clamp them firmly together.

Referring to Figs. 3 and 5, it will be apparent that the link F gives to the lever G a uniform swinging movement upon the

stud 4, and that if the saddle H is moved by the twin screws until the pivot 5 of the connecting rod I comes over the pivot 4 no movement will be given to the ram. If, on the other hand, the twin screws move the saddle to the extreme end of the lever the maximum stroke will be given to the ram. By making the clamping plate K of sufficient length and graduating it on its lower edge, and then providing an index on the column, the extent of the stroke is indicated. Furthermore, as the handle O' is near the pivot 4 it receives but little motion, as the lever swings, and hence it can be rotated easily while the parts are in motion to vary the stroke of the machine. Upon reference to Fig. 5 it will be seen that a differential crank motion is obtained for swinging the saddle lever, and that the ram moves with a nearly uniform forward motion and has a rapid return. The crank pin 2 starts from the position 20, Fig. 5, and as it passes through the twelve equidistant positions indicated, the link F will assume the respective positions indicated by dotted lines drawn from the respective points 2, and the forward stroke of the ram will be given while the crank pin 2 describes the arc of a circle of about 250°, and the return through an arc of 110°; that is to say, during the movement between the point 21 and the starting point 20. Hence the differential crank motion not only equalizes the power as applied to the tool, but it lessens the strain upon the machine by unifying the motion, and when the tool is returned it requires but little power to move it. The motion given to the cutter bar is correspondingly accelerated.

These shapers are built by Geo. Juengst & Sons of Croton Falls, N. Y., for whom the Prentiss Tool and Supply Company, 115 Liberty street, N. Y., are agents.

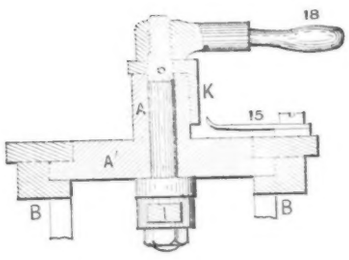


Fig. 2.—Cross Section through Ram.

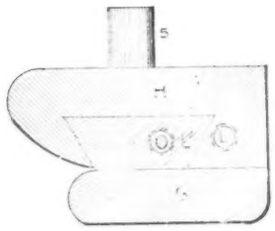


Fig. 4.—Enlarged Section on Line x x of Fig. 3.

Hydraulic Riveting Machines.

W. H. Wood, engineer and contractor, of Media, Pa., has just shipped two of his immense hydraulic riveting machines to the United States Navy Yards at Brooklyn and Boston, after they had been tested by Chief Engineer Edward D. Robie at the Chester Foundry. This test was very severe and was entirely satisfactory to Mr. Robie, who highly complimented Mr. Wood upon the accuracy of the designs, and the Chester Foundry and Machine Company upon the manner in which the machines had been built.

The machines are the most powerful ever built, and are intended for a working pressure of 1500 pounds to the square inch. The riveting machines are to drive rivets up to 1¼ inches diameter with an exerted pressure of 125 tons on the rivet, and a pressure of 25 tons on the plates to hold them together while the rivet is being driven. The machines are 10 feet 6 inches in the throat, and are capable of making the heaviest marine boilers with steel plates varying from ¾ to 1¼ inches thick, and up to 16 feet diameter. Boilers up to 30 feet long could be made without any inconvenience. The features of the machine are the extreme simplicity in repacking or for repairs, the internal mechanism being such that it can all be taken apart or put together again in three hours, and the process of repacking can be done in the space of 45 minutes. It would be difficult to understand the large proportions of these machines unless they could be inspected and seen, for the steel forgings on each machine weigh some 27,000 pounds, and the machine as it is complete about 100,000 pounds. The cranes over these machines lift 30 tons, and are arranged to lift this weight by the water pressure of 1500 pounds, and the transverse and trolley movements are by hand, and are arranged for handling the boilers to be riveted from the platform of the riveting machines. The Chester Foundry has built two other plants for Mr. Wood, including two machines to exert a pressure of 100 tons on the rivets and plates with the 15-ton cranes and accumulators, one of which was for the Tobin & Hamler Mfg. Company, Chicago, Ill., and the other for T. S. Sutherland, Troy, N. Y., both of which are in successful operation. But for the delay by the stoppage of the Chester Foundry this machinery would have been completed some time since. We understand the Scott Foundry, Reading, belonging to the Reading Iron Company, is building some of these machines for Mr. Wood, and that the well known firm of B. W. Payne & Sons, Elmira, N. Y., is also engaged building a quantity of hydraulic machinery for him from his drawing and designs to fulfill his contracts, some of which are for the Union Iron Works, San Francisco, who are building the Government cruisers, and other well-known firms in different parts of the country.

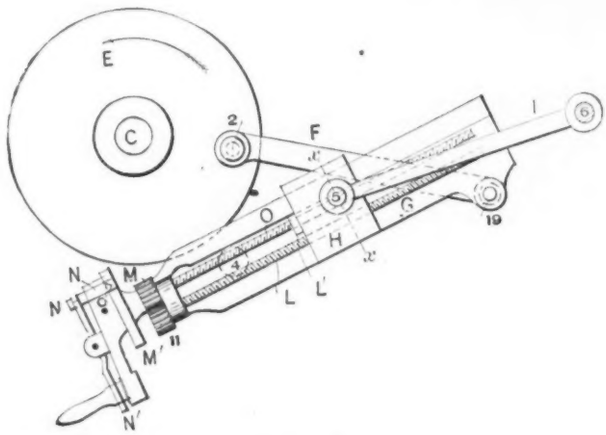


Fig. 3.—Plan View of Twin Screws, Saddle and Connections.

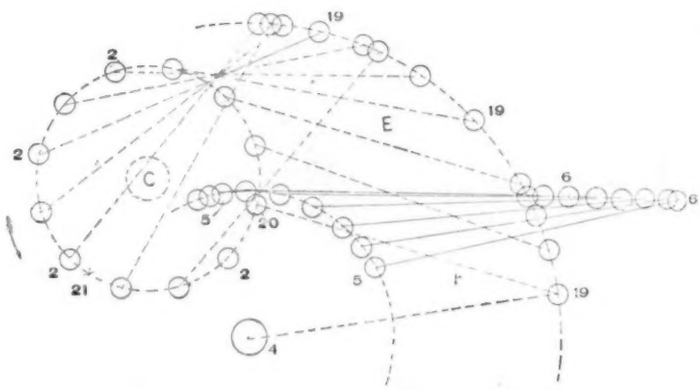


Fig. 5.—Diagram Illustrating Movements of Parts.

THE JUENGST CRANK SHAPER.

The Red D Line steamer Philadelphia has been cut in two at Cramp's shipyards, and 36 feet are being added to her length, to meet the requirements of the Postal Subsidy act.

Considerable excitement prevails at Ducktown, Tenn., over the recent developments of the copper deposits at that point. They are said to excel anything known in this country, and over $75,000 has been paid out the past week for options on copper property.

WORLD'S FAIR NOTES.

Summary of January Progress.

During January there were only 14 working days devoted to the construction of the World's Fair buildings at Jackson Park, but notwithstanding this fact, the report of the construction department for the month shows much progress. There were 11 stormy days when outdoor work was suspended, and more than half of the month was so cold that skylight work was impossible, the putty freezing before it could be spread. No plastering was done except in the inclosed portions of the Woman's Building and by the heat from salamanders. The ground was frozen to the depth of 18 inches and excavation work was impossible, even by the use of dynamite, which was unsuccessfully tried on the site of the Machinery Hall annex. Ice formed in the interior waterways to a thickness above a foot.

The construction department is in harmony with the contractors, and the work is being pushed whenever possible. During the month there were placed in contruction 5,867,360 feet of lumber and 1,636,962 pounds of iron, but these figures do not represent the work accomplished. Much finishing work in lathing, plastering, painting, glazing, and staff setting has been done on the Woman's, Horticulture, Mines, Fisheries, Forestry, and Administration buildings. Heavy carpentry work is in progress on the Manufactures, Agriculture, Electricity and Machinery buildings, while the work of the carpenters on the other buildings is shown in labor rather than in material placed. But a few weeks ago the men employed on the work were classified entirely as carpenters, laborers, and iron workers, but there are now employed on seven of the 13 buildings in course of construction roofers, skylight men, lathers, plasterers, painters, glaziers, and staff setters. The number of such workmen will constantly increase.

The Manufactures and Illinois State are the only buildings in which iron work has not been placed. The iron dome of the Horticultural Building was finished during the month, and the dome of the Administration Building has progressed. This work has been of a heroic order because of the severe cold, but these "lofters" among the iron workers are evidently made of the material with which they work, and they seem to get along as well in a blizzard as in the sunshine. Considerable structural iron was placed during the month in the Art Building in the shape of girders and columns; in the Agricultural Building in columns for roof support, and in the Electricity Building in roof trusses.

Exterior covering with staff is proceeding on six buildings—Woman's, Horticulture, Transportation, Mines, Administration and Fisheries. A canvas covering has been put over the outside scaffolding on the Mines, Administration, Horticulture and Fisheries buildings. The space thus inclosed is heated with stoves, which prevents the material from freezing. There were placed during the month 10,236 pieces, while the total staff in place amounts to 18,270 pieces. There will be required for the complete work 109,402 pieces, so that one-sixth of the total amount is now in place.

Work on the Electricity Building seems to be hanging fire. Twelve steel roof trusses were placed during the month, but the carpentry work has moved slowly. The Manufactures Building is working 300 carpenters and the work is pushing. The exterior walls and pavilion are rising at all points around the floor. The north and east pavilions are ready for the roof. The columns connecting these pavilions are gallery high, and at this section the second-story floor joists are laid.

Western Enthusiasm.

Ex-Senator John J. Ingalls of Kansas visited the grounds one day last week, after which he expressed himself as follows to a reporter:

"You can write about it, you can talk about it in the most glowing terms, but no one can appreciate it who does not come here to see it; it is simply wonderful. I was here last May and I saw a marshy, wooded waste, with only a little dredging boat at work, and I said to myself, they will never get it finished in time. But now look at it. Nothing but a calamity hurled by Providence can ever stop it.

"It is an exhalation. Yesterday it was not. To-day it is a vision of magnificence. To morrow it will be destroyed and nothing of it will remain but a dream, and yet, as wonderful as it is, the greatest wonder of the exposition will be Chicago, this magnificent city, able to produce within itself such a magnificent spectacle, and then to think that it is possible for it to be visited by Gladstone and De Lesseps, who were in active life when Chicago was not on the map."

Consideration to Gas Interests.

Chief of Construction Burnham has recommended to the Committee of Grounds and Buildings that space for a building, 150 x 350 feet be granted for an exhibit of the illumination and fuel gas industries of the country. Gas men for several months have been complaining that electricity was overshadowing gas light in the preparations for illuminating the exposition grounds. They had given up at last the idea of furnishing light for the main buildings in the park, and made a request for space for an exhibit of gas appliances. The building will probably be located southeast of Machinery Hall at the southern extremity of Jackson Park.

C. K. G. Billings, president of the People's Gas Company of Chicago, wants to furnish gas for lighting the north end of Jackson Park during the World's Fair. In order to secure the privilege he is willing to put in the entire plant at his own expense and also remove it without cost at the close of the exposition. He will furnish the gas at 90 cents per 1000 feet. The Committee on Grounds and Buildings appointed a special committee of one to investigate and make a report. The committee wants to know at what rate Mr. Billings will furnish fuel gas and several matters.

Specifications for Arc Lights.

Specifications for the arc lights of the electric illuminating plant to be used during the fair have been issued by Chief Burnham. Bids will be received until March 15, 1892.

About 6000 lamps will be required—5000 for interior illumination and 1000 for lighting up the grounds. All systems are eligible, and generators of any capacity are eligible. The lessor of the machinery and apparatus is to deliver it free on board of the cars in Jackson Park. Installation, removal, oil and power will be at the expense of the Exposition Company. The general management of the plant is to be under the direction of the Chief of Construction.

While proposals for small capacity are eligible, it is requested that the lessor shall specifically state the terms at which he is prepared to furnish capacities up to 500, 1000, 1500 and 2000 lights or more. The machinery and apparatus supplied may be listed and classified as an exhibit by the Director General, subject to the general regulations governing exhibits.

Mines and Mining Regulations.

Chief Fred J. V. Skiff of the Mines and Mining department has issued the rules and classification schedule governing exhibits in the building devoted to mines, mining and metallurgy.

All the information possible in relation to this exhibit is given in the pamphlet, with the special rules and regulations of the department, which are as follows:

1. Space granted to an exhibitor may be utilized in such manner as the exhibitor may determine. But before permits to occupy allotted spaces are issued, full detailed information, describing the proposed exhibit, showing general design, elevation, construction, decorations, material to be used, &c., must be submitted to the chief of the department for approval.

2. No exhibit shall be more than 20 feet in hight, except by consent of the chief of the department.

3. Partitions must not exceed 12 feet in higut.

4. Platforms must be 10 inches high, no more nor less.

5. Railings must be 3 feet in hight from the floor.

6. All covered spaces must be open, at least in front, and supports or columns must not exceed 12 feet in hight.

7. No portion of the flooring of the building can be removed or cut into by exhibitors except by special permission of the chief of the department.

8. Exhibitors of mining machinery or processes must be either the manufacturer or inventor of said machinery and processes, but the manufacturer or inventor may specially appoint an agent to make such exhibit, such appointment to be certified to and indorsed by the Director-General.

9. All exhibits of machinery in motion must be inclosed by a railing not less than 3 feet in hight from the floor, and no machinery in motion can be located within 3 feet of any aisle or passageway.

10. The power provided for the Mines and Mining Building will be electricity and compressed air. Electric, air, gas, water and sewer mains will be laid by the exposition. All connections for power, water or sewerage must be made at the expense of the exhibitor.

11. Space for raw material used in demonstration will require a special permit, and all product or refuse resulting from such demonstration must be removed each day.

12. All mineral in cabinets must be plainly labeled, giving at least the scientific name and the locality of the specimen.

13. All ores must have affixed or attached thereto information as to the character of the specimen, location of deposit and rough analysis. Such other data as will be of interest to the public may be given at the discretion of the exhibitor.

14. All coals must bear a card or tag, giving variety and tests and location of mine and output.

15. All building stones must bear a card or tag, giving popular name and tests, and location of quarry.

16. No piece of ore or coal shall exceed 3 feet in diameter, except by special permission of the chief of the department.

17. Exhibits of building and ornamented stone must be in cubes and should not be more than 1 foot square; one side at least must be finished.

18. Upright cabinets, to conform to general design, should have a base 1 foot high, a glass front 6 feet in hight, a 6-inch cornice, be 1 foot in depth, and either 5 or 10 feet in width. A preferable size for flat cases is 4 by 5 feet, 1 foot deep.

19. Slabs of marble, onyx, &c., whether rough or polished, pavement slabs, artificial stone, set cement, tiling, &c., must

not exceed 4 feet square in superficial dimensions.

20. Permits for space will not be transferable.

21. Safety vaults can be secured for the safe keeping and protection of exhibits of unusual value.

22. The chief of the department reserves the right to construe, modify or amend these rules and regulations.

Illinois Coal at the Fair.

Prof. Joshua Lindahl, State Geologist of Illinois, has been instructed by the State Board of World's Fair Commissioners to prepare a collection of Illinois coal, to be exhibited in the State Building at the fair. He finds the funds at his disposal entirely too small for this work, and he is now sending out a circular to all the mine owners in the State asking their co-operation. In his circular Professor Lindahl says: "A mere collection of samples of coal would be of no scientific interest and contribute no exact information as to the value of these exhibits to the industries. Each sample exhibited should therefore be provided with a printed descriptive label, giving as complete information as practicable concerning the mine and its seam of coal. This label should contain, among other statements, a report from a competent chemist of the chemical composition and fuel value of the coal in the portion of mine which is operated at present. The character of the coal is often quite different in different portions of the mine and analyses made some years ago, therefore, do not apply to the coals in the same mine at the present time. A new analysis should be made of samples so selected as to represent a fair average of the coals that are now taken out of the mine. These samples should be collected in the mine by a competent person, who cannot be suspected of unfairness in selecting the samples." Professor Lindahl proposes to have the mine owners pay for the analyses of samples from their respective mines. He says he made arrangements for two classes of analyses—one to cost $7 and another, more complete, to cost $20. The mine owners are asked to send samples of their coal at such time as may hereafter be indicated, and they are given the privilege of choosing the character of the analysis to be made.

Visit of the London Polytechnic.

Chicago expects to have a visit from a batch of 3000 members of the London Polytechnic during the World's Fair next year. Robert Mitchell and Douglas Hogg were in that city last week and secured quarters for the number mentioned. A thousand ocean passages have already been contracted for by the Hamburg-American and Inman lines. The principal railways on this side have taken kindly to the venture, and have offered specially tempting rates. James Dredge, the British Commissioner of the World's Fair, has also been using his influence to facilitate matters, and the World's Fair managers here have promised the big delegation of craftsmen a warm welcome. In an interview on this subject, Mr. Mitchell said;

"The London Polytechnic was founded as a mechanics' institution on a religious basis in 1882 for the purpose of giving technical instruction to the young men of London. Quintin Hogg, its founder and president, spent $750,000 on the experiment. But it was an excellent hit, for we have now 14,500 members and students, 80 per cent. of whom belong to the artisan classes. In addition we have a special department run for young women, which is attended by 2000 members and students. The educational curriculum comprises 250 different classes, and nearly every trade from watchmaking to bricklaying is taught. We aim at combining theory with practice, and while teaching the boys to use their hands we also teach them to think. All the requirements of the members are catered to as far as possible by way of gymnasiums, out door sports, lectures, summer outings and excursions. Our summer excursions are a strong feature, no less than 9000 members having visited different parts of the Continent during the last three years.

"This brings me to our American visit. The idea was first mooted last September, and to encourage those who could not plank down the money at one payment, we proposed to make the passage payable in installments. The students took up the idea with enthusiasm, and soon several hundred of our men were paying weekly installments toward the cost of the trip.

"While we felt inclined to move cautiously, we thought the venture was so far assured of success as to contract for 1000 passages right away. We did not, of course, know what kind of terms the railroads on this side would give us, but we have settled for all that. We are getting such favorable terms from the big lines that we can carry our men the round trip, board them and all, pay every expense, and land them on old England's shores again for £23, or about $115, a man. I have taken accommodations at the Metropolitan Hotel, New York, for 3000 visitors, and while in Chicago we are going to be the guests of Mr. Moody at his Bible Institute. That is, if he can take us all. He says he can and it was largely owing to his generous offer that we were able to arrange the trip on such a large scale.

"Our line of route will be, after a two days' stay in New York, to go on to Philadelphia for a day, then two days at Washington, a week at Chicago, and return by Niagara Falls and Albany to New York. Our boys have given up their holidays this year to get double vacations for the trip next year. We feel certain that the satisfactory report Mr. Hogg and myself will be able to present will induce a large number of Y. M. C. A. and other organizations in England to follow suit and come to the World's Fair."

"What about your Polytechnic exhibit at the fair?"

"Well, all that was settled some time ago. We have been allotted 400 square feet of space. We expect to have one of the most interesting exhibits at the exposition. It will comprise specimens of our young men's work in the technical schools, such as engineering, architecture, furniture, watch and clock making, designing, sculpture, modeling, and various other trades. The work of our members took the gold medal at the technical schools' exhibition in London two years ago. From an educational point of view we expect to make a good showing. We also expect to have a special women's exhibit of all kinds of fancy work, under the superintendence of Mrs. Hogg and a band of ladies. This work is now being done by our lady members and promises to be an interesting feature of our display."

"Have you any prospect of starting any similar institutions on this side of the water?"

"Several gentlemen whose names I am not at liberty to give invited me to America last year to organize such institutions, but I could not come just then. So far as I can see there is a strong feeling in favor of the scheme here, although no practical steps have been taken to start the movement. We started on our own capital ten years ago, and now the British Government has this year made an appropriation of £750,000 for the endowment of our institution and other similar organizations in and around London. But we established our claim to government recognition by several years of successful operation. We have been the pioneers of the polytechnic movement, and we expect that the work will spread rapidly, since it is now supported by public funds.

"While I am here I have an invitation to visit D. L. Moody's schools at Northfield, with the view of organizing a manual instruction department on lines similar to our own which have proved so successful. Doubtless the publicity given to this modern kind of education by the *Review of Reviews* and other publications will help to spread the idea in America."

Water Transportation in the Park.

Everybody is to be given a chance to bid for the privilege of constructing and operating boats on the canals and lagoons in Jackson Park. Chief Burnham has been authorized by the Committee on Grounds and Buildings to ask for bids. There are no limitations as to the character of the power employed for the propulsion of the boats. It may be by steam, electricity, ammonia, or any other species of motor. The boats, however, must be 34 feet long and 6 feet beam, and be built of an ornamental pattern and capable of carrying 30 passengers. According to present plans there will be 50 boats in the fleet.

South America.

The Latin American department is in receipt of a letter from the Governor of Santa Catharina, Brazil, stating that there will be held next July in Desterro, the capital of Santa Catharina, an exposition in which will be displayed the objects to be sent from that State to Chicago. The Governor expresses his conviction that the commission appointed by him for this purpose will get up a most creditable display. The following is a list of the commissioners appointed: Dr. Victorine de Paula Ramos, president; Dr. Jose Henriques de Paiva, Senhor Pedro de Freitas Cardoso, Senhor Wenceslau Freysleben, Senhor Jose Maria des Santos Carneiro, Major Francesco Tolentine Vieira de Souza, Colonel Virgilio Jose Villela, Major Innocencio Jose da Costa Campinas, Senhor Ernesto Wahl.

The Congressional Visit.

The Congressional party to visit the fair grounds is to leave Washington by special train Friday night, February 19, and arrive in Chicago on Saturday. During Saturday and Sunday they are to be entertained by the various clubs, societies and citizens. Monday morning, by special train over the Illinois Central, they are to be taken through the grounds, and given opportunity to thoroughly inspect the progress of the work there. Lunch will be served in the afternoon at the Washington Driving Park Club House, and the party will return to the city in time to attend the annual celebration of Washington's Birthday by the Union League Club, at the Auditorium. A banquet tendered by the Commercial Club will close the programme.

No assurance has been received from Congress as to the number that would accept the invitation, but it is understood that the invitation will be generally accepted. The committee which visited Washington before the holidays had issued an invitation through the four Chicago Congressmen in the name of Chicago's citizens, and this invitation had been well received and great regret expressed by the Congressmen that they were unable to accept it at that time.

Brevities.

At the meeting of the Buildings and Grounds Committee yesterday the contract for the structural iron work upon the pumping station was awarded to the Bouton Foundry Company for the sum of $2272.

Executive Commissioner Gwynne of Missouri has asked for space to show the

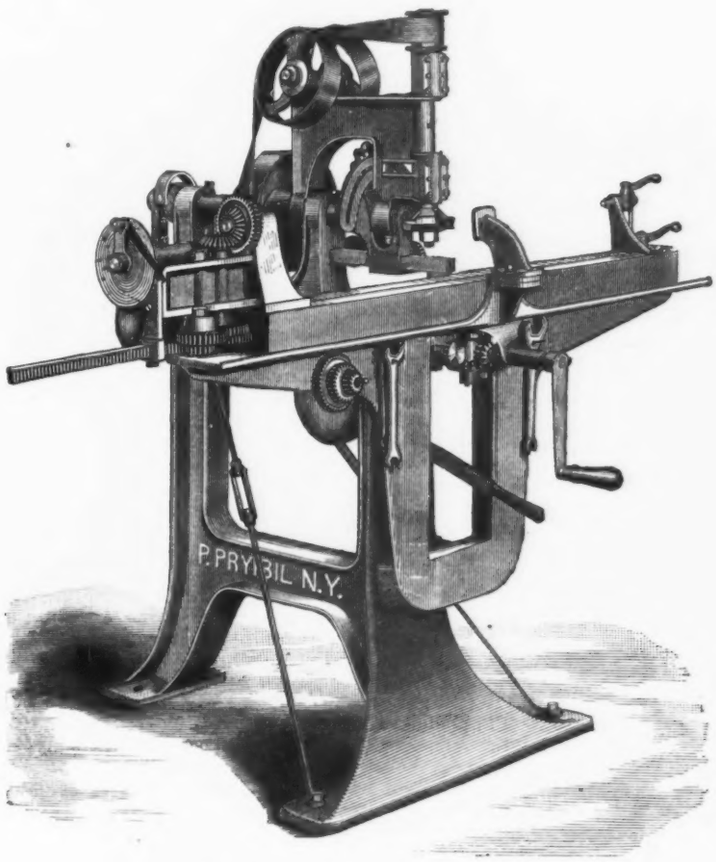
processes of mining and smelting lead ores. He wanted to begin at the beginning with antiquated types of mining tools and lead up to the improved machinery of to-day. Chief Skiff could not make an absolute promise, but agreed to get the space if possible.

The contract for the glass work for tanks on the Fisheries Building has been awarded to the James H. Rice Company of Chicago, for the sum of $11,930.

The Pryibil Fluting and Twist Machine.

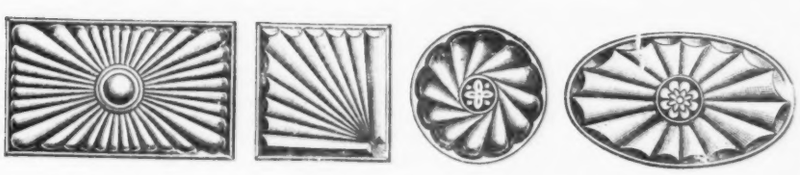
A new fluting and twist machine is being built by P. Pryibil of 512–524 West Forty-first street, New York. The machine produces all kinds of spiral or rope molding, either straight, tapered, curved or oval, and will make right, left and pineapple cuts and does straight fluting. It cuts from one to six threads on a piece, and makes any degree of twist from one turn in 1½ inches of length to one in 10½ inches. The cutters are similar in shape and arrangement to those used on variety shapers, and are made of the same steel. They are held between collars that are somewhat similar, but so arranged that the knives have a peculiar action, cutting from the outside in, and making a smooth cut, even against the grain. They revolve always in the same direction, whether the twist be right or left, and one set will produce several different shapes of work. Changing from one degree of twist to another, or from right to left, takes less than one minute. This machine will swing 8 inches, and will take 42 or 60 inches between centers, according to length ordered.

A medallion fluting attachment is provided for making radial fluting on flat work up to 9 inches square or 6 x 12 oblong. This fluting can be either perfectly flat, or can be waved or swelled, and can run to the center or tangent to a central circle.



FLUTING AND TWIST MACHINE.

Work Done on Twist Machine.



Work Done with Fluting Attachment.

The Massachusetts Board of Arbitration.

The sixth annual report of the State Board of Arbitration was submitted to the Legislature 1st inst. The work of the board has during the past year been extensive, and has invaded many fields of industry. The larger proportion of the controversies between labor and capital which have been laid before the board have been furnished by the boot and shoe makers of the State. The board is satisfied that arbitration on the part of the State is of benefit, and that a larger number of cases will come before it for settlement in the future.

The board says, however, that "the industrial problem is still very far from being settled, and that there is room for broader and more enlightened views concernining the relations of men in the operations of the industrial world."

Referring to the true underlying principle of wages, the board states that "in entering upon a consideration of this kind, under existing conditions of public sentiment, it would find the law of supply and demand, taken by itself alone, a very inadequate and insufficient aid to a just and enlightened decision."

In the opinion of the board, according to the report, one of the most important and responsible classes of cases with which the board has to deal is those fixing prices for machine work. It says: "The prices for machine work should be set high enough to make sure that in the exercise of due diligence the workman's earnings will not fall below what he had previously received for hand labor." It is gratifying to note, says the board, that of late the unions have shown a disposition to accept a fair price on a machine, and let it prove for itself by experience what it can do.

Relative to the effect that the operations of the State arbitrators have had upon public opinion and upon the men involved in controversies, the board states: "With added experience and greater familiarity on the part of the business world with the methods and principles by which the action of the board is regulated, the efficiency of the State board as a conciliator has increased, and on the side of arbitration. It is a gratifying fact that in every such case the advice offered and the price-list recommended have been cheerfully accepted by all parties, with permanent good results to the business interest."

The board commends and recommends for further trial the law passed in 1890, authorizing the appointment by the board of expert assistants.

Buenos Ayres advices to December 22 afford no substantial promise of improvement in the public finances. Expenditures in all directions are disproportionate to receipts. It also appears that the delusion so often cherished that the great increase in the production of the country in wool and wheat would permanently reduce the gold premium is being rapidly dissipated by the force of stern facts.

The New York Central Railroad are about to erect repairing and construction shops at Buffalo, at a cost of $500,000. When completed these works and the shops at West Albany will enable the company to build about all the locomotives which their service will require. The new shops will rival the works of the Pennsylvania Railroad at Altoona, which rank among the finest in the world. Chief Engineer Katte is preparing the plans.

The Loomis-Pettibone Furnaces.

We have from time to time dealt with the progress made by Burdett Loomis and Hawley Pettibone of Hartford, Conn., in the introduction of the Loomis fuel gas. The first comprehensive plant was established by Burdett Loomis at the saw and file works of Henry Disston & Sons, at Tacony, near Philadelphia, following its introduction at the works of the John Russell Cutlery Company at Turners Falls, Mass., and the Waltham Watch Company. Since then a fuel gas plant has been built at the Addyston Pipe Works, another at Akron, Ohio, and lately the fuel gas has been introduced on a large scale at the mill of the American Tube and Iron Company at Middletown, Pa. Lately particular attention has been paid to the designing of furnaces for the economical application of the fuel gas to a variety of purposes. The general principles adopted are the thorough mixture of air and gas, supplied at even pressure, before their entrance into the furnace, the burning of the gas in the apparatus where its work is to be done, and the utilization of the waste heat to preheat the air for combustion. The Loomis gas generator delivers into holders so that the fuel gas is supplied at a uniform pressure. For the furnaces themselves a circular form has been adopted whenever practicable. The gas and air are delivered into the circular type of furnace in such a manner that the entire working area is covered, a swirling motion being produced. It is claimed that the combustion is so thorough that cast-iron pipes can be used without danger for the heating of the air by the waste gases.

We have chosen a number of the designs of the Loomis-Pettibone furnaces as typical of the methods adopted. Figs. 1 and 2 refer to a small forge heated by two jets and supplied, for preheating the air, with a cast-iron box heater. Figs. 3 and 4 illustrate a reheating furnace designed for reheating iron and steel plates and sheet copper for annealing, tempering or rerolling. It is direct fired, using producer gas, the principal aim being to secure even heating. This is effected by the use of a

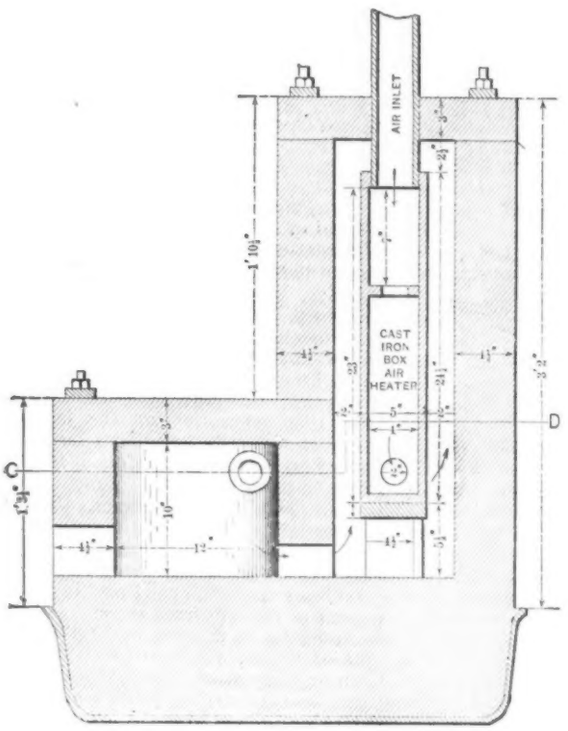


Fig. 1.—Vertical Section.

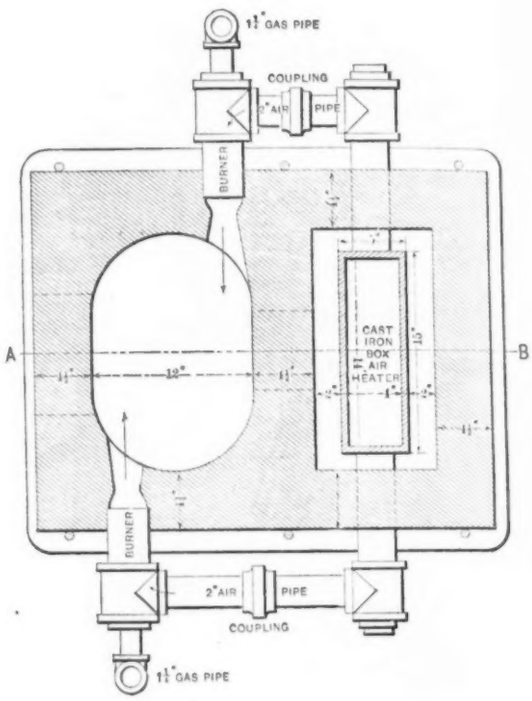


Fig. 2.—Horizontal Section.

LOOMIS-PETTIBONE FORGE.

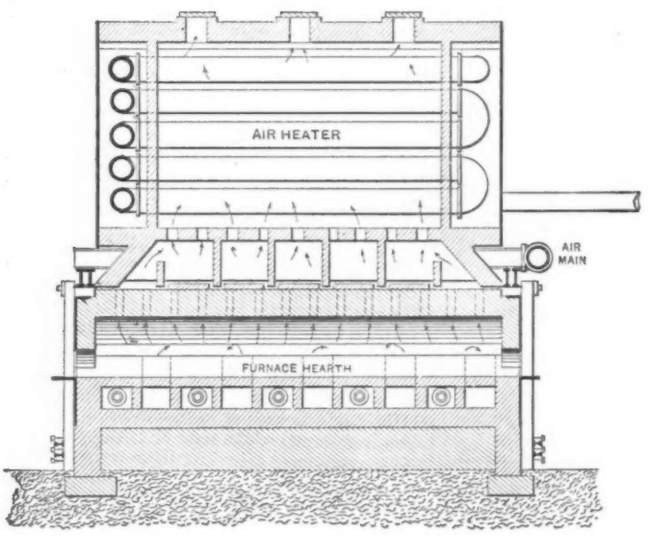


Fig. 3.—Longitudinal Section through C D.

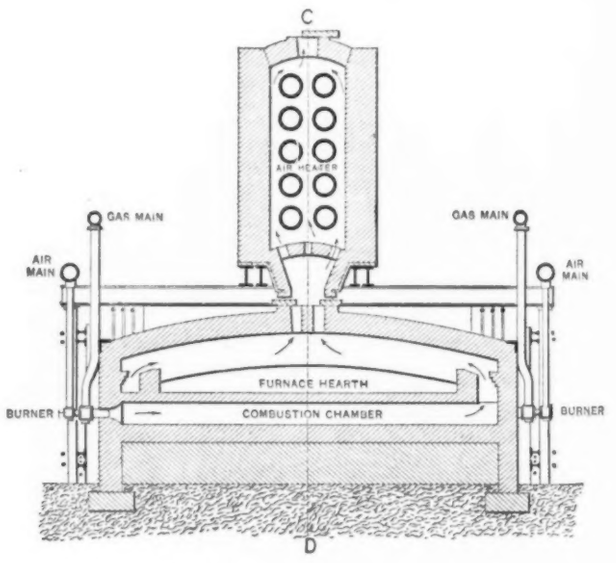


Fig. 4.—Cross Section.

LOOMIS-PETTIBONE REHEATING FURNACE.

series of combustion chambers, alternately fired on one and on the other side of the furnace, as shown in the engraving.

A somewhat striking design is the double-hearth puddling furnace. In operating, hearth No. 1 is being worked and they escape to the air heater. When the charge in No. 1 hearth has been finished a new charge is introduced and No. 2 is worked, the current of burning gas being reversed.

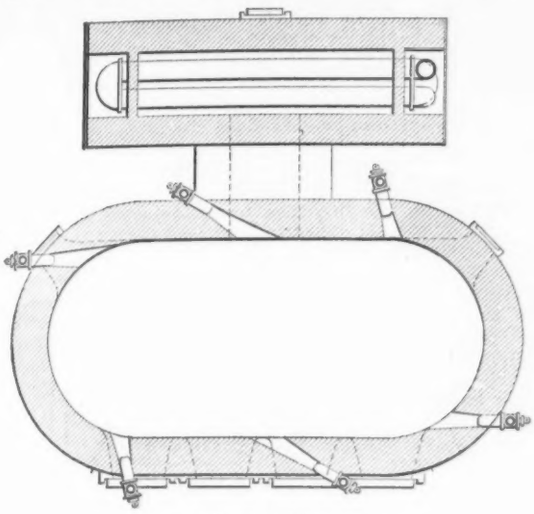


Fig. 5.—Plan.

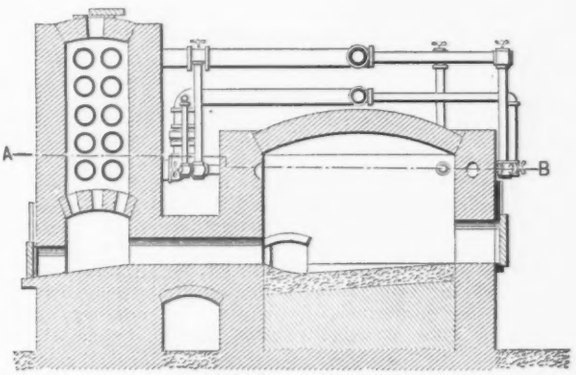


Fig. 6.—Vertical Section.

BILLET HEATING FURNACE.

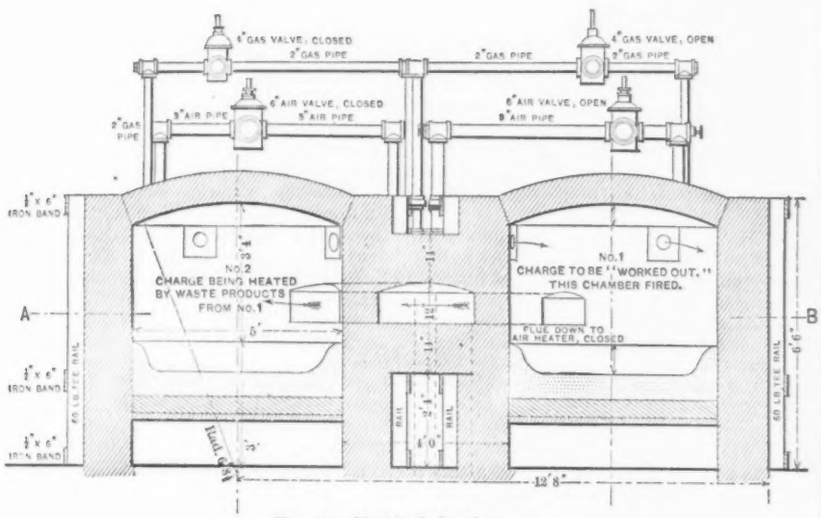


Fig. 7.—Vertical Section.

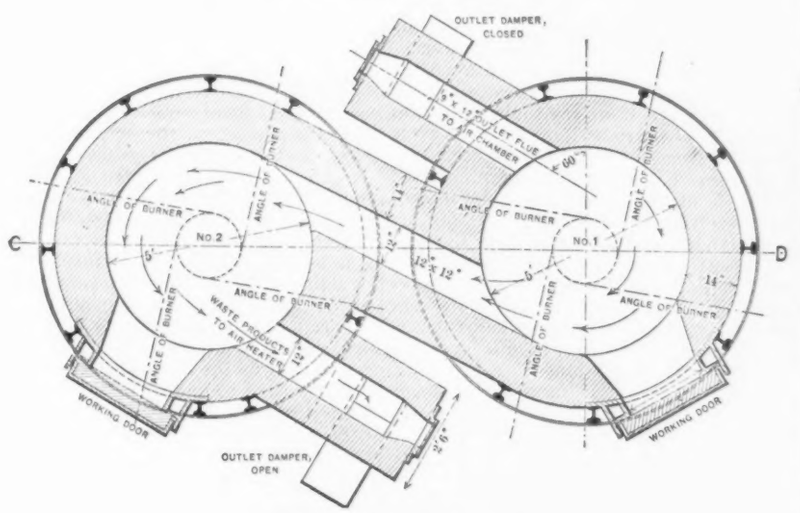


Fig. 8.—Horizontal Section.

DOUBLE HEARTH PUDDLING FURNACE.

The leading point in the billet-heating furnace, of which drawings are presented in Figs. 5 and 6, is an oval hearth, with four working doors, the gas posts being so placed, as shown, as to impart a revolving motion to the flame.

gas burned in it through three or more burners placed near the crown. The passage to the air heater is closed by a firebrick damper and the products of combustion are made to pass into hearth No. 2, which has been freshly charged. Thence

Tests of Steel.

Walter E. Koch of Pittsburgh regards the following tests as the best, after an experience of 20 years in the open-hearth steel manufacture and a less extended experience with Bessemer and Clapp-Griffiths steels:

1. Straight test piece, 20 inches long, properly prepared for 8 inches in the middle, should be pulled, and the elastic limit, ultimate strength, elongation and reduction of area noted. I think 8 inches, and no other length, should be the standard for test. The present 1-inch marine test is absurd and of no value whatever.

2. When plates or bars are annealed I think tests should be taken after annealing.

3. The drifting test, if done fairly and in presence of the maker's representative, is a good one. It has been in use in some places for years.

4. The cold bends and quench bends are both essential — especially the latter — for steels running above, say, 0.18 in carbon.

5. One test per melting heat should be the minimum.

6. I would never allow an inspector to stamp rejected material. This was tried once in Scotland and had to be abandoned.

7. I am strongly in favor of having all inspection done at the mill before shipment. The "coupon" system is unfair. *Audi alteram partem* should be the motto over every testing room; and, surely, both parties should be represented at so important a time. Moreover, much delay and trouble is often occasioned by the coupon system, to say nothing of accidents caused by the projecting coupon.

8. I think, also, that inspectors should be made conversant with the methods of manufacture. In this way mutual confidence is established, to the great advantage of both parties.

The directors of the Suez Canal propose to admit the passage of steamers carrying petroleum in bulk after July 1. Should the canal be opened for the tank trade, the distance between New York, Bombay, &c., would be reduced some 4000 miles, a gain which might well enable us to secure some part of the oil trade now in Russian hands, and to make better headway against that competition.

The Alloys of Iron and Tungsten.

BY J. B. NAU, NEW YORK.

It may be of some interest to recall briefly the most important properties of some alloys of iron with other metals, especially at a time when these different alloys attract such widespread attention. The greater part of the data presented have been taken from articles published some 16 years ago by the well-known Swedish metallurgist, Prof. R Akermann, and republished in a pamphlet translated from the original by Prof. Josef von Ehrenwerth.

While tungsten is so hard that it scratches glass and so refractory that it cannot be smelted in an ordinary steel furnace, it can in presence of iron be smelted in almost any proportions. However, the fusing of the iron becomes more difficult as the proportion of tungsten increases. Like carbon, tungsten seems to reduce the ductility of iron when cold, as well as its malleability when heated, but its effects in this direction are much weaker than with carbon. Hence by incorporating simultaneously carbon and tungsten in iron, it is possible to obtain a much harder steel than with carbon alone, without danger of an extraordinary brittleness in the cold metal or an increased difficulty in the working of the heated metal.

Whenever a special grade of hardness is required, it is frequently the custom to use a high tungsten steel, known in England under the name of special steel. A good specimen of this kind of steel from Sheffield, used for chisels, according to analyses made by Baron E. Barne Row in the School of Mines at Stockholm, contained 9.3 per cent. of tungsten, 0.7 per cent. of silver and 0.6 per cent. of carbon. This steel, though used with great advantage in its untempered state to turn chilled rolls, was not brittle, nevertheless it was hard enough to scratch glass. A rod with a cross section of $\frac{1}{4}$ square inch breaks only with great difficulty.

In a sample of Mushet's special steel Professor Heeren also found 8.3 per cent. of tungsten and 1.73 per cent. of manganese. Judging from its description, this steel seems to be similar to the preceding one. In another special steel, made by Howell of Sheffield, Bruswitz found 2.863 per cent. of tungsten and 1.15 per cent. of carbon. The hardness possessed by tungsten steel cannot be increased by hardening. It may even be said that a real hardening of this alloy is impossible. Such a proceeding would be followed by the production of numerous cracks in the metal, owing to its extraordinary hardness. The only operation that tungsten steel can be submitted to when cold is grinding. It follows that this kind of steel has to be given its final shape through hammering at a red-hot heat, and even then, when the percentage of tungsten is high, it has to be treated very carefully; and in order to avoid breaking it, not only is it necessary to reheat it several times while it is being hammered, but when the tool has acquired the desired shape hammering must still be continued gently and with numerous blows until it becomes nearly cold. Then only can it be cooled entirely.

Tungsten is not only employed to produce steel of an extraordinary hardness, but more especially to obtain a steel which, with a moderate hardness, allies great toughness, resistance and ductility. Thus, in the manufacture of the French cast-iron guns, steel with only a small percentage of tungsten was considered as the most appropriate material to be used in the bottom cover. Steel from Assailly, used for this purpose, according to analysis made by Dr. A. Tamm at the School of Mines in Stockholm, contained carbon, 0.52 per cent.; silicium, 0.04 per cent.; tungsten, 0.3 per cent.; phosphorus, 0.04 per cent.; sulphur, 0.005 per cent.

The mechanical tests made by Styffe, in regard to tensile strength and elongation, gave the following results:

Breaking load per square inch of original area, pounds	172,424
Reduction of area, per cent	0.54
Average elongation after fracture, per cent	13

The mineral tungsten (wolframite), which is composed of tungstate of iron and oxide of manganese (MnO), can be reduced by charcoal at a high temperature. The temperature required to smelt the so obtained product will be particularly high, on account of the high percentage of tungsten, whereas the heat required to smelt a mixture of iron and tungsten will be lowered with a higher proportion of iron or iron oxide. To produce tungsten steel it is of the utmost importance to eliminate from the mineral used all obnoxious elements. To this effect the ore is first roasted, and, after having been treated by diluted acids, it is washed by water. Such a treatment will at once eliminate sulphur and arsenic. After a careful drying the purified mineral is strongly heated in a crucible lined with charcoal, whereby the tungstic acid will be reduced to metallic tungsten, while, at the same time, the production of a compound of carbon, iron and manganese will take place. This mass, which possesses a dark color and a high specific weight, is added to and smelted with the steel in proportions varying from 0.5 to 25 per cent. of the weight of steel, according to the amount of metallic tungsten to be incorporated in the final steel.

R. Mushet patented another method to obtain tungsten steel. It consists in mixing together the finely pulverized tungsten mineral and an equal weight of peat. This mixture is spread on a dry stone floor, cut into pieces, and added in certain proportions to the molten cast steel in a crucible.

In the production of tungsten Bessemer steel M. Le Guen, France, added, toward the end of the blow, molten tungsten pig iron, which he had obtained by melting together in a cupola pig iron and pieces of a tungsten composition. This composition was obtained by a mixture of 90 per cent. reduced tungsten, 10 per cent. of lime and a certain amount of tar. The same tungsten pig iron can also be obtained by the fusion of ordinary pig iron in presence of the mixture of an unreduced tungsten mineral and charcoal. According to Le Guen, tungsten increases the hardness of pig iron to a certain limit, as well as its absolute strength; should, however, tungsten exceed a certain percentage, the strength of the product will be accordingly increased.

Bernoulli obtained tungsten steel by smelting together in a crucible tungstic acid or tungsten mineral and cast-iron filings. However, it seems that by this method tungsten steel can be produced only when the pig iron used is gray and not too rich in combined carbon. It is believed, indeed, that tungstic acid has no tendency to unite with combined carbon, whereas it unites freely with non-combined carbon or graphite mechanically inclosed in the iron. Furthermore, in order to obtain the desired results, it is necessary that the gray pig iron should be added in finely divided particles instead of pieces, and that it should be intimately mixed with the tungstic acid or mineral of tungsten.

This is as far as Prof. R. Akermann's publication goes. Some more information about tungsten steel can be found in H. M. Howe's "Metallurgy of Steel." Relating to its manufacture, we read on page 368 that E. P. Martin succeeded in making ferrotungsten of 28 per cent. in the blast furnace. Several samples of ferrotungsten exhibited at Paris contained as much as 43 to 45 per cent. of tungsten.

In Percy's "Metallurgy," we see on page 189 that, according to analyses made by the Duc of Luynes of ten specimens of the celebrated Oriental damasked steel, he discovered that eight of the analyzed samples contained tungsten, two of them even in very notable quantities (0.518 per cent. to 1 per cent.), while in all of the samples analyzed nickel was discovered ranging from traces to 3.9355, very nearly 4 per cent.

It is remarkable that the extraordinary toughness of this steel should be due probably to the presence in its composition of the two substances, tungsten and nickel, when we consider that the best and toughest armor plates have been made in the last year of nickel steel.

Big Bridge Schemes.

Another big bridge scheme made its appearance in the New York Legislature on Friday in the shape of a bill introduced by Senator Floyd Jones, which seeks to incorporate the Manhattan and Long Island Bridge Company. The incorporators named in the bill are Zenas King, president of the King Bridge Company of Cleveland; Daniel Magone of Ogdensburg, ex-Collector of the Port of New York; Daniel P. Eells, a Cleveland banker, interested in the Nickel Plate; John E. Van Ostrand; J. J. Morehouse, an iron manufacturer of Chatham, N. Y.; Charles A. Otis, president of the Otis Steel Company of Cleveland; Charles F. Stowell of the Railroad Commissioners' office, who will be the consulting engineer of the new company; James A. King, H. W. King, Harley B. Gibbs and Henry G. Clagstone, all connected with the King Bridge Company of Cleveland, and John J. Donovan, a New York contractor. By the terms of the bill it is proposed to build bridges over the East and Harlem rivers, and thereby to open up a large portion of Long Island City which has heretofore been most inaccessible.

It is proposed to start with one bridge, to be located on the New York side somewhere between Forty-first street and Ninety-second street, and on the Long Island side between Sixth street and Flushing avenue, the Mayors of both cities being afforded the privilege of each selecting a commissioner to confer with the directors as to the precise location. The company are to begin construction inside of a year after the passage of the act, and to complete the same in four years. The company propose to start with a capital of $1,000,000, with the privilege of extending the same to $10,000,000, to be free from taxation for five years after the bridge is in use, and to take for approaches to the structure all kinds of property, except city parks, together with making any railroad connections that the company should deem proper. The company shall also be empowered to fix the rate of tolls.

The second bridge named in the bill is to start near Potter avenue, in Long Island City, and extend to Ward's Island (near the Inebriate Asylum), thence across Ward's Island upon a viaduct and over the Harlem River to a point near 106th street, New York City, and from a point on Ward's Island opposite or nearly opposite 106th street upon a street (upon a viaduct) along the western shore of said island over Little Hell Gate and Randall's Island (upon a viaduct) to a point opposite or nearly opposite 125th street, and from the last named point on Randall's Island (upon a viaduct) to the Harlem Kills, thence over the Harlem Kills to a point at or near St. Ann's avenue in the Twenty-third Ward of New York City.

The Michelson Range Finder.

On shipboard, where vessels are maneuvering and consequently changing their distances from each other with great rapidity, range finders that can accurately and quickly ascertain the distances are essential features in the outfit. Ammunition for great guns is expensive and for the large calibers very bulky, and as the firing cannot be rapid, every shot must tell. During the day the larger of the quick-fire guns answer admirably to give the range to the guns of the main battery, as their projectiles throw up masses of water, and, too, their explosion is plainly visible. But the very fact of there being such a stream of projectiles pouring from the enemy's batteries interferes materially with watching for the effect of one's own, and the first one to get the range has an immense advantage.

The range finder that has been introduced aboard of our own naval vessels, as well as numbers of foreign men-of-war, including the much talked of Chilian battleship Capitan Prat, is the invention of Lieut. Bradley A. Fiske, United States Navy, and is an ingenious application of electricity and the principles of the Wheatstone bridge. [This range finder was described and illustrated in *The Iron Age* of January 14, 1892.] Its competitor is an optical telemeter invented by Prof. Albert A. Michelson, formerly a naval officer, who employs mirrors and prisms for effecting the coincidence of images of the target or object whose distance is required.

The Fiske instrument has undergone considerable improvements since its first introduction and is now much simpler and more convenient. It was used aboard the Baltimore for establishing the marine league while that ship was in Chilian waters and for coasting or surveying purposes it has a value hardly second to that for which it was originally constructed.

The Michelson telemeter consists of a telescope, four plane mirrors and a prism for effecting the coincidence of the rays of light. The plan view is shown in Fig. 1, and in Fig. 2 is shown a rear side view, looking in the direction of the arrow in Fig. 1. The frame for supporting the telescope and the mirrors is composed of two pairs of rods, 4 and 4′ and 5. These rods are united at their outer ends, to which on a stand are secured the mirrors 2 and 2′, making an angle of about 52° with the axis of the telescope. The inner ends of the rods are tied together by a bar, which also acts as a support for the telescope, 1, to which is secured a handle, by means of which the telemeter may be held by the operator.

Supported in front of the object end of the telescope is a stationary mirror, 3, arranged parallel to the mirror 2, and another, 3′, parallel to the mirror 2′, and which are of plain glass carrying a semi-transparent coat of silver or platinum, the rear face of which is protected by another piece of plate glass. The adjustment for the coincidence of the rays of light is effected by means of a pair of prisms, 7 and 8, supported in bevel gear rims, which in turn are supported and revolved on the ends of a stationary cylinder held in the outer end of an arm whose inner end is secured to the frame of the telemeter.

The beveled gear rims carrying the prisms are revolved so as to cause the prisms to rotate in opposite directions by means of a pinion on the end of a sleeve, 9. A graduated disk, 6, and thumb screw are secured on the sleeve, so that any rotation on the part of the disk results in a rotation of the prisms.

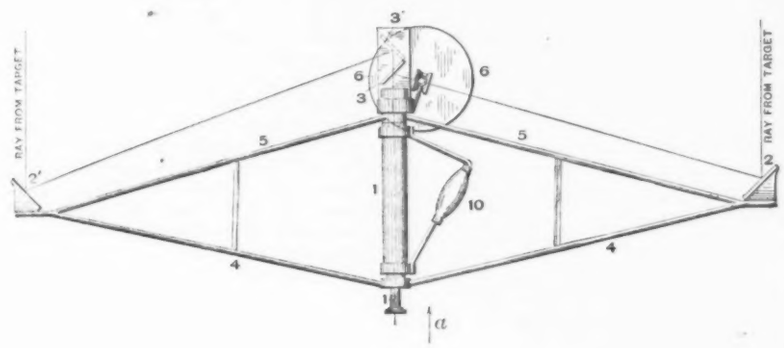


Fig. 1.—Plan.

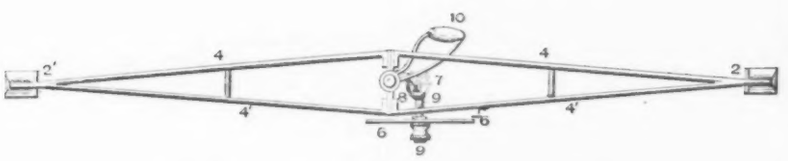


Fig. 2.—View Looking in Direction of Arrow a in Fig. 1.

THE MICHELSON RANGE FINDER.

The telemeter, by means of the handle 10, may be held in a horizontal or vertical position by one hand of the operator, while the other hand turns the thumb screw for revolving the gear rims, which will alter the effective angle of the prisms, and hence the direction of the rays of light reflected from mirrors 2 and 2′. By means of the adjustment of the prisms these rays from the object are made to coincide until they form one image. The true angle at which the rays of light strike the mirrors can then be read off from the graduated disk, and the distance of the object may be readily calculated, the instrument's error having first been determined by getting a parallelism between two rays of light from a very distant source, such, for instance, as the horizon or the sun.

If the telemeter is directed toward an object whose distance it is desired to ascertain, the images of said object do not coincide owing to the fact that the rays of light are no longer parallel, but make an angle with each other, which is smaller the further the object is away. For example, if D is the distance required, B the distance between the mirrors and e the angle which B subtends at the distance D, then $D = \frac{B}{e}$. B is known and e may be found by turning the prisms until the two images coincide, at which time the rays entering the telescope will be parallel, and consequently the angle through which the ray was bent by the prisms must be equal to the angle.

The shortest distance that it may be required to measure can readily be determined once for all for any particular instrument in the following way: The operator holds the telemeter and an attendant stations himself at a distance from the instrument—say about 1000 feet—with a signal. The telescope is pointed at the signal, which is moved toward or away from the telemeter until by revolving the prisms the two images coincide. Then the distance from the telemeter to the signal may be accurately measured, and this will be a basis for determining the distances required, which are calculated and tabulated for convenient reference.

It is more convenient to be able to read distances at once and be independent of a table, and for this purpose the disk 6 is graduated into parts reading thousands of feet directly. The disk is arranged to move half as fast as the prisms, the ratio of the gearing being one to two. As has been stated, the disk and thumb screw are fast on a sleeve which carries a pinion on its inner end. Any revolutions of the pinion to cause the prisms to revolve will also revolve the disk and thumb screw, causing the scale to pass by the end of the pointer, which indicates the zero point when the mirrors are properly adjusted. When the prisms have been revolved and the two images form but one read off from the disk the distance toward which the pointer is directed.

Although the base of this instrument measures only 4 feet and for great distances the triangle to be solved is very ill-conditioned, the instrument compares very favorably with others that have been experimented with. It has to recommend it the facts that it requires no electrical connections, but one observer is necessary and in case of accident it can be replaced by a complete instrument in a few minutes. It is proposed always having duplicates at hand, as the expense of the whole affair will not be at all heavy.

Fast Engine Building.

The Baldwin Locomotive Works claims to hold the record for rapid locomotive building. An order was received January 20 from the St. Louis Merchants' Bridge Company for four large engines of the most approved pattern, and on January 25 the engines were finished and ready for shipment. Between the date of filling the order and its completion a Sunday intervened, so that the actual time consumed was only four days, or one day for each engine. The boilers used in the engines were not quite completed when the order arrived, but the work was pushed forward at a lively rate. One whole day was consumed in fitting these boilers with patent water purifiers, and this work had to be done before the flues could be constructed. Another drawback to the rapid completion of the work was the painting. This also consumes nearly a whole day's time. So that, practically speaking, the four engines were finished in less than four days. It is a common thing to complete an engine in three days, providing the material has been bought and is in readiness.

Costa Rica has ordered a large iron building in Europe, to be shipped in sections, for a schoolhouse.

Reciprocity With the British West Indies.

The President has issued a proclamation announcing that the government of Great Britain has by due legal enactment authorized the admission, from and after February 1, 1892, of the articles and merchandise named in the following schedules, on the terms stated therein, in the British colonies of Trinidad (which includes Tobago), Barbadoes, the Leeward Islands (consisting of the Islands of Antigua, Montserrat, Saint Christopher, Nevis, Dominica, with their respective dependencies, and the Virgin Islands), the Windward Islands (consisting of St. Lucia, St. Vincent and their dependencies, but exclusive of Grenada and its dependencies), and into the colony of British Guiana on and after April 1, 1892.

TABLE NO. 1: APPLICABLE TO BRITISH GUIANA, TRINIDAD AND TOBAGO, BARBADOES, THE LEEWARD ISLANDS, AND THE WINDWARD ISLANDS, EXCEPTING THE ISLAND OF GRENADA.

Schedule A.—Articles to be admitted free of all customs duty and other national, colonial, or municipal charges: Belting for machinery, of leather, canvas or india rubber. Bridges of iron or wood, or of both combined. Carts, wagons, cars and barrows, with or without springs, for ordinary roads and agricultural use, not including vehicles of pleasure. Clocks, mantel or wall. Copper, bronze, zinc and lead articles, plain and nickel plated, for industrial and domestic uses, and for building. Crucibles and melting pots of all kinds. Gas fixtures and pipes. Gold and silver coin of the United States and bullion. Implements, utensils and tools for agriculture, exclusive of cutlasses and forks.

Lamps and lanterns, locomotives, railway rolling stock, rails, railway ties and all materials and appliances for railways and tramways. Printing presses, types, rules, spaces and all accessories for printing. Sewing machines and all parts and accessories thereof. Shipbuilding materials and accessories of all kinds, when used in the construction, equipment or repair of vessels or boats of any kind, except rope and cordage of all kinds, including wire rope. Steam and power engines and machines, machinery and apparatus, whether stationary or portable, worked by power or hand, for agriculture, irrigation, mining, the arts and industries of all kinds, and all necessary parts and appliances for the erection and repair thereof, or the communication of motive power thereto. Steam boilers and steam pipes. Telegraph wire, telegraphic, telephonic and electrical apparatus and appliances of all kinds for communication or illumination. Water pipes of all classes, materials and dimensions. Wire for fences, with the hooks, staples, nails and the like appliances for fastening the same. Zinc, tin and lead in sheets. Asbestos and tar paper for roofing. It is understood that the packages or coverings in which the articles named in the foregoing schedule are imported shall be free of duty if they are usual and proper for the purpose.

TABLE NO. 2.

Applicable to the colony of Jamaica and its dependencies.

Schedule A.—Articles to be admitted free of all customs duty and any other national, colonial or municipal charges: Belting for machinery, of leather, canvas or india rubber. Bridges of iron or wood, or of both combined. Carts, wagons, cars and barrows, with or without springs, for ordinary roads and agricultural use, not including vehicles of pleasure. Coal and coke. Clocks, mantel or wall. Cotton seed and its products, to include meal, meal cake, oil and cottolene. Crucibles and melting pots of all kinds. Gas fixtures and pipes. Gold and silver coin of the United States and bullion. Implements, utensils and tools for agriculture, exclusive of cutlasses and forks. Iron, galvanized Iron for roofing. Lamps and lanterns not exceeding 10 shillings each in value. Locomotives, railway rolling stock, rails, railway ties, and all materials and appliances for railways and tramways. Printing pressess, types, rules, spaces and all accessories for printing. Quicksilver. Sewing machines, and all parts and accessories thereof. Shipbuilding materials and accessories of all kinds, when used in the construction, equipment or repair of vessels or boats of any kind, except rope and cordage of all kinds, including wire rope, and subject to specific regulations to avoid abuse in the importation. Steam and power engines and machines, machinery and apparatus, whether stationary or portable, worked by power or by hand, for agriculture, irrigation, mining, the arts and industries of all kinds, and all necessary parts and appliances for the erection or repair thereof or the communication of motive power thereto. Steam boilers and steam pipes. Sugar, refined. Telegraph wire, telegraphic, telephonic and electrical apparatus and appliance or all kinds, for communication or illumination. Trees, plants, vines and seeds and grains of all kinds, for propagations or cultivation. Wire for fences, with the hook, staples, nails and the like appliances for fastening the same. Zinc, tin and lead in sheets; asbestos and tar paper for roofing. It is understood that the packages or coverings in which the articles named in the foregoing schedule are imported shall befree of duty if they are uanal and proper for the purpose.

The Western Engineers' Society.

Commissioner of Public Works Aldrich of Chicago, is without doubt responsible for the liveliest and also the most largely attended meeting ever held by the Western Society of Engineers. It was held on February 3, at 78 La Salle street, Chicago.

A few days ago the commissioner notified the society that he would be glad to have it name three of its members to look into the facts concerning the work on the new water-works tunnel at Park Row and report the results of their investigations to the public. This request was communicated to the society at its regular meeting. General Fitz Simons opened the discussion by declaring that he thought it would be a very unwise thing for the society to appoint such a committee as Mr. Aldrich had suggested. Such action would be both impolitic and unprofessional—impolitic because the society had no power to detail any of its members to such work, and unprofessional because it might lead to a criticism of one of the members. He therefore moved that the society thank Mr. Aldrich for the honor conferred, but that he be informed that the society considered it entirely without its province to take the action suggested. Octave Chanute didn't agree with General Fitz Simons. He said the Society of American Engineers had frequently made investigations of works in which the public was interested, and he saw no reason why the Western Society of Engineers should not do likewise. He thought the society would be shrinking from its duty if the commissioner's request be not favorably acted upon. He therefore moved as a substitute to General Fitz Simons' resolution to the effect that the society recognize its responsibility in a matter of that kind, and would refer the request to its Board of Directors with the recommendation that the directors present to Mr. Aldrich the names of ten or more competent engineers of this country, whether members of the Western Society of Engineers or not, who are best fitted to perform the duties required. Isham Randolph, the new president, who got in a little speech before he was escorted to the chair by retiring President Cooley, thought the request a great compliment, but that the responsibility of a report of the water tunnel rested with the city and not with the society. The city could get a report from able, unprejudiced men by paying them, and to ask the society to do it gratis was a grain too much.

Adam Gottlieb was in favor of Mr. Chanute's resolution. The society, he said, had been striving ever since its organization to become a recognized authority, and he thought that it should not neglect its first opportunity to give desired aid, especially when such aid was in behalf of public interests. He would not have only three, but many more members selected.

Chief Engineer Bates of the Chicago, Milwaukee and St. Paul Railroad struck a popular chord when he suggested that the full membership of the society be named.

L. E. Cooley, who had retired from the chair, took up a cudgel to defend Mr. Chanute's position. He considered the investigation of public works a function the society could properly exercise. Public good was the only consideration. The work in question had been continued through three administrations of city government; it had been delayed longer than was at first thought necessary; it had cost more than had been thought necessary; therefore, an investigation might properly be made.

Others had it, pro and con, the final upshot being the adoption of Mr. Chanute's motion.

Mr. Cooley said he thought the Board of Directors would report the names of engineers to Mr. Aldrich within a week.

The business of next importance was the report of the secretary regarding the election of president. Of a total of 241 votes, of which the necessary number for election was 122, Isham Randolph received 133, J. F. Wallace 94, and R. P. Morgan 14. Mr. Cooley gracefully made way for his successor, who made a neat little speech of acceptance complimentary both to the retiring president and the society.

Then there was a hush of expectancy while the secretary prepared to read a report from Richard P. Morgan, of the Committee on the Progression of the Railway Problem, the report President Fish of the Illinois Central Railway has been accused of having kept back. Mr. Morgan briefly reviewed the work of the committee and explained that as it had been impossible, owing to the absence from town of one or more members of the committee, to prepare a report, there was none in existence. He thought one would be ready in about 60 days.

Mr. Morgan's explanation called to mind the fact that there was a vacancy on the committee, owing to the death of Colonel Mason, and H. B. Herr was therefore appointed. A committee, to consist of the ex-presidents of the society, was also named to draft memorial resolutions on the death of Colonel Mason.

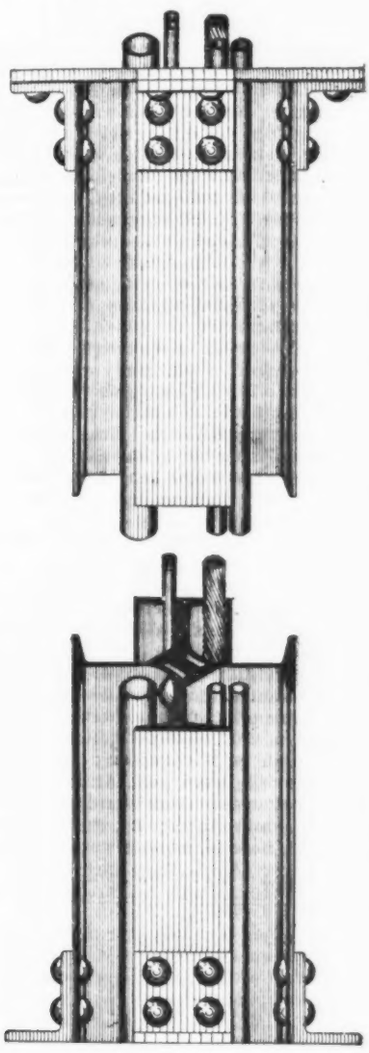
The remainder of the session was devoted to the hearing of a minority report of the committee detailed to consider highway bridge legislation. Adam Gottlieb, who was to have read a paper on "The Behavior of Iron Columns Under High Temperature," held his arguments for the next meeting.

The Muskegon Iron and Steel Company of Muskegon, Mich., have issued a neat pamphlet of 24 pages descriptive of their various products. These embrace iron and open-hearth steel bars and shapes. Their steel brands are as follows: Muskegon

Cast, their regular grade of open-hearth steel; Fibrous Cast, a special grade, extra tough, made by a process of their own; Arrow Steel Tire, machine straightened, and every bundle branded. Their iron brands are as follows: "M" (for Muskegon), a good bar iron, better than any ordinary refined; "M B" (for Muskegon's Best), a strong iron, suitable for rivets, bridge and fine carriage iron; and an extra-good grade of horseshoe bar. They also make common iron of a better grade than is usually sold for common. The catalogue contains the bar-iron and bar-steel lists, cuts of sleigh shoe, tire and plow shapes, and tables of weights of bar steel, angles, tee iron, sheets, plates, &c. The Chicago agents for the company are L. S. Boomer & Co., the Rookery.

The Larimer Column.

The Larimer column, manufactured by Jones & Laughlins, Limited, of Pittsburgh and Chicago, is meeting with much favor



The Larimer Column.

among architects for various reasons. One of its special advantages is illustrated in the accompanying cut, which shows the ease with which water pipes, tubes, electric wires, &c., can be disposed of. Under the system of building construction commonly employed, the pipes, tubes and wires have been carried up through the floors in the corners of the rooms and exterior to the walls. They are unsightly when thus exposed, and the openings which must be made through the floors are decidedly objectionable. By the use of the Larimer column this is avoided, as the construction of the column permits pipes, wires, &c., to be placed on all sides of it, without in any way interfering with the fire proofing or other manner of covering. It will be seen by the illustration that the plates between the columns are perforated. This can be done as required, thus allowing extensions to be made from the base of the column to the highest stories without trouble or exposure. This advantage over the ordinary methods of constructing columns is not accomplished through any sacrifice of strength, but merely through the different disposition of the material composing the column. The columns of each different size can further be easily increased in weight and greatly increased in strength without materially increasing their diameter, or interfering with the space to be used for the passage of pipes and wires. The saving of space when used as an interior column, the ease of fire proofing and the readiness with which connections can be made as necessities of position and load require are all mentioned by the manufacturers as special advantages claimed for this style of construction.

Hot Charging and Hot Piling Muck Bar.*

BY R. R. GUBBINS.

The manufacture of bar and sheet iron has been so often and widely discussed that any remarks concerning its general importance from an economic point of view would be superfluous, but it is thought that a description of the machinery and system used in the operation known as hot piling, indicating its essential difference from the old method hitherto in universal use and the advantages claimed for it, with some account of recent results obtained in its application at the works of the North Kent Iron Works, Frith, will prove of interest. The machinery has been patented in the United Kingdom and in the United States of America. The constantly increasing cost of labor and fuel has been felt more and more in recent years by iron manufacturers, and it is hoped that this paper will not be considered devoid of interest by those engaged in this important field of industry. The improvements in furnaces have led to as much economy of fuel as can reasonably be expected, and the thorough organization of modern iron works leaves little room for saving of labor. It remains, then, only possible to promote further economy by saving the initial heat of the puddle bar. That there is enough heat wasted in this particular direction at present to be worth saving may be admitted.

A night's work of a pair of gas furnaces heating scrap piles for a train of forge rolls may be placed at 20 tons. The fuel needed to heat 20 tons of cold puddle bars as hot as they were when they left the forge train cannot be safely placed at less than 3 tons; nor could this amount of heating be done in one furnace in less than a shift of 12 hours. It is therefore clear that if the said 20 tons could be worked straight off, without being allowed to cool, the 3 tons of fuel could be saved, as well as a great deal of time. It was some years ago that I first took up this subject practically, by coiling the puddle bar hot, as it came from the rolls, round a revolving block. The coil thus made was then flattened under the steam hammer, returned to the furnace, reheated and rolled off into finished iron. This made excellent work, as by cutting the puddle bar on the hot shears to the weight required for the pile, sufficient accuracy was secured for ordinary merchant work. In this device two kinds of formers were used, one of which made a long coil and the other a circular one. The latter shape is the best, as the coil itself can be easily rolled to the flattening hammer, and, besides, it can be flattened so as to have the outside end in the right position to come in one with the end of the pile itself, for were it to come anywhere else it would be liable to cause a fault in the bar, unless the welding was exceedingly perfect. The forming block, of course, must be of such a size as to coil up a bar of a certain length so many times, according to number of parts high required in the pile, in order to fill the first pass in the bolting rolls.

Theoretically speaking, there ought to be a former for each different weight of pile required in the mill, as the same section is always required to fill the first pass, and variations of weight can only be made by increasing or diminishing the length of the pile itself. Thus the pile to produce a bar of flat iron 2 inches by $\frac{1}{2}$ inch by 16 feet weighs 64 pounds, and if made of puddle bar $3\frac{1}{4}$ inches by $\frac{7}{8}$ inch, piled three high, will measure 1 foot 10 inches in length, while a bar 3 inches by $\frac{1}{2}$ inch by 16 feet will require a similar three-high pile 2 feet $9\frac{1}{2}$ inches long. Thus the second block would have to be about 4 inches greater in diameter than the first one. As the flattening hammer can be used to draw the piles down a little, some of the formers for intermediate sizes may be dispensed with, and it may be taken that the work of a bar mill up to 3-inch squares and rounds and 6-inch by 1-inch flats can be successfully dealt with with 14 formers. As these are plain cast-iron castings, and are very easily changed on their spindle, the process may be considered a cheap and simple one, which can safely be intrusted to the ordinary rolling-mill workmen. The work of insuring correct weight in the piles is also simplified. The puddle bar, being of the same section, weighs a certain number of pounds per foot, and a table of weights corresponding to lengths being furnished to the man at the hot shears, he can set his gauge by the latter, and arrive at sufficiently accurate weights without using the scales at all.

Hot flat bars of this kind can be coiled very readily by bending rolls in the same manner as boiler plate and the like is bent, and no doubt satisfactory results could be attained in this way with a set of bending rolls designed for the purpose. It would be necessary only to have a ready means of releasing the coiled bar when it was finished, and also to give free vertical play to the top roll, so that it could rise over the parts of the coil as their number increased. I have never made a practical trial of this method of coiling a puddled bar, but I see no reason why it should not be done. Such a method would involve the necessity of having a more careful man to regulate the machine than would be the case with the revolving formers, but such men are not rare in a rolling mill, and I would anticipate little trouble under this head. If ever coil piling takes its place as a recognized process in rolling mill practice, I should be interested in watching the struggle for the survival of the fittest between these two methods of accomplishing it. My attention having thus far been given to coiling the bar, it subsequently occurred to me that equally good results might be attained by folding it.

Those who are not very familiar with rolling-mill work may not, perhaps, be aware of the manner in which a bar will fold itself if the end strikes against anything solid enough to stop it as it leaves the rolls. Instances are frequent where this accident produces a perfect symmetrical pile like that shown. It is not at all strange that this freak of the bar

* Read before the South Staffordshire Institute of Iron and Steel Works Managers.

should suggest to an observer that possibly this might be a good way of piling the iron, so as to save cooling, cropping and weighing. In March, 1891, the United States Patent Office granted a patent, No. 441,474, to Messrs. Eynon & Seaman of Wilmington, Del., for a folded pile in all respects the same as those which are occasionally produced accidentally. I mention this in order to show that the subject I am dealing with has already attracted the attention of iron manufacturers in the States, and to thus mark its importance. In my own case I was unable to see my way clearly to folding the bar with sufficient accuracy to meet the delicate requirements of weight for the work of a merchant mill. I concluded, in consequence, that it would be more practicable in every way if I assisted it to fold itself by nicking it pretty nearly in two, on opposite sides, and at regular distances apart. The length then between these notches would give the length of the pile, and this might be made greater or less by feeding the bar through the nicking rolls at a greater or slower speed. The nicking rolls and their knives are driven by the puddle bar rolls at a constant speed. The feed rolls are driven by them by means of change wheels (like the leading screw of a lathe) at any required speed. All these pairs of rolls are vertically adjustable, and they are so set that the nicking rolls only just bear on the bar going through enough to steady it, while it is tightly nipped by the feed rolls. The speed at which it passes through is entirely controlled by the latter, and the greater their speed the greater distance there will be between the nicks made by the knives. On the other hand, if the feed rolls run very slowly the nicks will be very close together.

The trolley is long enough to carry a row of piles sufficient for about half a heat. At one end there is a lifting device over which the peel is laid when the trolley and its load are brought over in front of the furnace door. The nearest pile is drawn on to the peel by the furnaceman's helper by means of a rake. The helper, by bearing on a treadle, raises the lifter together with the peel high enough to command the furnace door and to be clear of the remaining piles upon the trolley. The furnaceman is thus enabled to charge the pile to any part of the furnace he may require, in precisely the same manner as he would charge a cold one which his helper had laid by hand upon the peel. The lever, or treadle, works on a hook, and is available for two or more trolleys, and the sliding bars which carry the hook can be pushed in out of the way when not in use.

When a rolling mill has plenty of orders there is never any trouble in working satisfactorily. The forge train is kept going, turning out billets or puddle bars as fast as the furnaces are able to turn out the puddle balls or heap the scrap piles. Under these circumstances the advantage of sending the iron directly to the reheating furnaces, before it has parted with any serious amount of its original heat, is obvious. Besides the direct saving in fuel and the labor of handling, weighing, cropping and piling, there is also the substantial saving in time to be considered, as well as the increased yield through the absence of scale. Taking six heats as a good 12 hours' work for a re-heating furnace on small merchant iron, the average time per heat is two hours; of this about 15 minutes is taken up in making the bottom and charging and a half hour drawing out, leaving 75 minutes for heating the iron when charged cold. These same piles when charged hot are ready to be drawn in 15 minutes, which shows a saving in each heat of 60 minutes, or, in other words, enables about double the work to be got out of the furnace. The furnace, in turning out this increased quantity of work, is not forced, because it is really not imparting any more heat to its charges than it would do in case they were cold. The difference lies in the fact that as they are charged with iron, some of which is already very nearly welding hot, a very small increase of heat is all that is needed, and this the furnace readily and quickly gives. I very much regret that I am not able to give full data of the results of hot piling over a more extended period. My experiments were interrupted. I had, however, accomplished sufficient to place the invention well outside the bounds of theory, and to show plainly that the original heat of the puddle bar could be saved, and that by saving it the yield of a reheating furnace would be about doubled. I also thoroughly established the fact that the ordinary workmen in a rolling mill can charge hot piles as quickly and as cheaply as they have heretofore charged cold ones. I purposely refrain from giving tabulated statements showing saving of fuel and labor which might either justly or unjustly be based upon the foregoing statements. I claim only to save the greater part of the initial heat of the puddle bar, and each inquirer must settle for himself how much that is.

Trade Publications.

FROM A PAMPHLET issued by the Duval Metallic Packing Company of 43 John street, New York, we take the following description of the metallic packing made by them: It is made of fine white brass wire of special composition, arranged to give the maximum degree of toughness and strength, at the same time being of such hardness that should any wear occur it will take place in the packing and not on the rods. It is, therefore, incapable of causing wear or cutting of the rods, and being entirely metallic in its composition, will not burn, though subjected to the highest steam pressures. Owing to its great strength it can be used in machines where the pressure is very high, and where other packings of a fibrous nature would fail. Because of its composition the packing is not affected by acids or rust, and is therefore of great service for use in connection with fire pumps or other machines which stand idle a portion of the time. The lubrication of rods and plungers is unusually perfect with this packing; since in addition to the self-lubricating character of its composition it readily takes up and holds oil, graphite and other lubricants.

THE WEIMER MACHINE WORKS COMPANY of Lebanon, Pa., have just issued a pamphlet describing their patent tilting cinder car. The ladle into which the cinder is run is made of plate iron, stiffened by angle irons, and arranged to receive a lining of iron or refractory material. This ladle is carried by a strong bail made of cast iron, terminating at either end in trunnions and bearings; the bail is arranged so as to allow the ladle to expand or contract freely. Two four-wheel car trucks, provided with equalizing bars, are so connected as to form a car which can pass over any uneven track or around any curve which a locomotive traverses. Over each of these trucks is placed a bolster, toothed to form a rack, and pinions, secured to the journals on the ends of the trunnions carrying the cast-iron bail, engage the teeth on the racks. The cars are fitted with appropriate buffers and connections for attaching them together or to an engine. At one end of the car is a smaller pinion, a worm gear and a hand wheel, by which motion is communicated to the larger pinions. As these revolve the ladle is tilted and at the same time carried toward either side of the track, thus permitting the contents to be discharged clear of the railroad sills. As the motion of the ladle is under perfect control, the rapidity with which it is discharged can be adjusted to suit local requirements, and it can be so reversed as to entirely free itself, thus obviating troublesome skins and skulls, the removal of which is destructive to the lining in the ordinary ladle car. This also admits of carrying cold cinder in the ladle, which cannot be done in those from which the cinder is tapped.

Representative Fithian of Illinois presented a bill to make all farm implements free.

Oil Versus Coal.

To the discussion of a paper on the preparation of anthracite read before the American Institute of Mining Engineers, Axel Sanlin of New York contributed the following:

About a year ago I made a test to determine the economy of substituting bituminous coal as fuel for crude oil or anthracite screenings (below the size of pea coal). In determining such a matter, the size of the plant is of importance, and also the question whether it is to be run continuously or in the day time only. There are also numerous local conditions to be considered. The plant in this case was required to evaporate per hour 36,000 pounds of water to steam of 80 pounds pressure. It comprised a number of tubular boilers 72 inches in diameter, 20 feet long, with fifty-six 4-inch steel tubes, furnishing a heating surface of 1388 square feet per boiler. The shell was made of ⅝-inch steel; the heads, of ½-inch steel, were well braced. The boilers were fitted with McClave grates for hard-coal firing, and ordinary double grate bars for burning soft coal; and where oil was utilized the grate was covered with a double layer of fire brick, and a checker work of fire brick was arranged across the grate at a distance of about 2 feet 6 inches from the point of the burner. The grate area was 30 square feet. The pipe connecting the boiler with the smoke stack was brick lined and 29 inches diameter in the clear. The boilers were coupled in pairs to brick-lined iron smoke stacks 95 feet high and 47 inches diameter in the clear. Unfortunately, no means were available for determining the temperature of the escaping gases in the stacks. Feed water was supplied to the boilers at from 68° to 70° F. In computing the tests, the temperature of the feed water is uniformly assumed to have been 212° F. and corresponding corrections were in each case made. The test lasted ten hours. This may seem a very short time, but as so many contributing factors had to be purely assumed, it was considered long enough for arriving at a conclusion sufficiently correct.

When firing coal, the grates were thoroughly cleaned once during the ten hours of the test, precisely as would have been the case in ordinary practice. Crude Lima oil was supplied under a uniform pressure of 20 pounds per square inch, and enough oil was fed to fill the combustion chamber without unduly straining or crowding the boiler. The prices of fuel were assumed to be: Oil, 2.06 cents per gallon; bituminous coal, $2.65 per ton; anthracite screenings (all below pea), $1.25 per ton, all delivered in the boiler house. The test gave the following figures, which were used as the basis for estimates of economy:

Performance of 72 x 240 inch Tubular Boiler.

Fuel.	Crude oil.	Bituminous coal.	Anthracite screenings.
Duration of test, hours.	10	10	10
Amount of fuel burned, lbs.	4,746	7,120	4,723
Value of fuel burned...	$13.41	$9.28	$2.95
Total water evaporated, lbs.	60,913	47,206	22,562
Water evaporated per square foot of heating surface per hour, lbs..	4,388	3,400	1,625
Actual average steam pressure, lbs.	67	65	66
Average temperature of feed-water, Fahr	68	68	70
Equivalent amount of water evaporated from 212° F. to 80 lbs. steam per lb. of fuel, lbs.	15.15	7.87	5.53
Cost of fuel per 1 lb. water evaporated, cents.	0.0220	0.0196	0.0131
Cost of fuel for evaporating 360,000 lbs. of water to 80 lbs. steam.	$79.20	$69.56	$47.16

As a first conclusion to be drawn from these figures, it was shown that, to evaporate the 360,000 pounds of water required, it would be necessary to operate—with oil, 6 boilers; with bituminous coal, 8 boilers; with anthracite screenings, 17 boilers.

The number of men and cost of labor for operating this number of boilers during 10 hours would be:

		Per day.
For oil, two water tenders.	$1.80	$3.60
For bituminous coal:		
Two water tenders.....	1.80 = $3.60	9.80
Four firemen	1.55 = 6.20	
For anthracite screenings:		
Four water tenders	1.80 = 7.20	21.15
Nine firemen.....	1.55 = 13.95	

Making allowances for depreciation, interest, insurance, &c., in proportion to the size of the plant actually in use, the following table was constructed:

Comparison of the Economical Results Obtained from the Use of Different Fuels in a Boiler Plant with an Evaporative Capacity of about 36,000 Pounds of Water per Hour during Ten Hours.

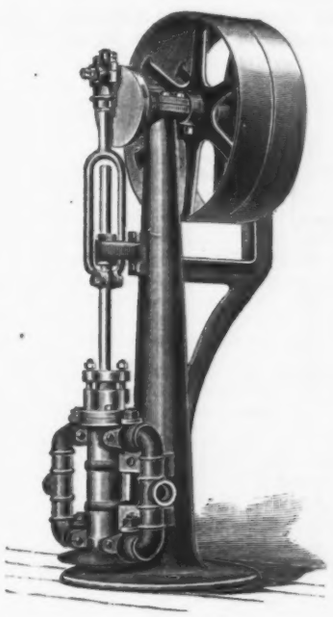
	Crude oil.	Bituminous coal.	Anthracite coal.
Number of boilers in operation	6	8	17
Actual value of fuel consumed	$79.20	$69.56	$47.16
Cost of labor.....	3.60	9.80	21.15
Depreciation, interest, insurance on plant at 15 per cent.	9.00	12.00	25.00
Repairs, including grate bars (assumed).....	1.00	2.00	4.00
Total cost per day.....	92.80	93.36	97.71

Besides the slight advantage which the above table indicates for the use of oil, there are others, which cannot be readily put in dollars and cents; the principal being that the moment the steam is not required the oil can be shut off, and all waste of fuel stopped. In burning coal, steam is generated for at least two hours after the machinery is stopped for the night, and the fuel on the grates is burnt for nothing. In spite of these advantages, it was concluded that there would not be enough saved to justify the construction of tanks for the storage of the oil, the installation of pumps, distributing pipes, &c.; and bituminous coal was settled upon as practically the best fuel for the plant in question.

One of Syracuse's (N. Y.) most thriving industries is the Economy Foundry Company. The firm has just completed a large casting. It consists of a cog wheel and is designed for use in the Portland Cement Works at Warners. The wheel is 11 feet in diameter, the face of the wheel is 10½ inches and the "pitch" 4¾ inches. It was cast in eight sections, with sectional gear at the center. The whole weighs 5 tons. This is the largest gear ever cast, except the one on the Corliss engine at the Centennial Exposition in Philadelphia in 1876. This is the first of four gears which this firm will construct. They will be used in what is known as the Kraatnauer method of compounding the raw mixture for Portland cement, according to the dry process. Each of the four gears will have a capacity of compounding 20 tons of raw material, making a total of 80 tons (representing 400 barrels of Portland cement, when finished), every 24 hours. The same amount of work done by the old method would take 40 men; by the new method only two men will be required. The Economy Foundry Company at the same time manufacture some of the smallest gearing used, thus doing heavy and light work. A short time ago they manufactured an anvil for the Sanderson Steel Company which weighed 5 tons. When in full running order, 120 men are employed. This firm make all the castings for the Pease Furnace Company, heaters, pumps, &c. In order to increase their facilities, a new overhead track has been placed in position. The pattern shop is said to be the best equipped in Syracuse. Twelve pattern makers are constantly employed. The cupola holds 7 tons up to the charging door, and 12 tons of metal have been melted in 1 hour and 20 minutes. The fire is running every day in the year.

Double-Acting Power Pump.

We herewith show illustration of a strong, simple and effective double-acting power pump, suitable for feeding steam boilers or forcing water against pressure. The valves are the ordinary check valves made from composition. The valves on the left side are for suction, and on the right side for discharge, the contents of the cylinder being discharged twice in a revolution. The pin in the face plate is "dovetailed" into the slot, and the stroke of the pump can be changed in a moment's time. This variation of the length of the



Double-Acting Power Pump.

stroke, and consequently the quantity discharged per revolution, is very convenient for boiler feeding when the quantity of water evaporated is less in the summer than in the winter. These pumps have been built by the manufacturers, the Valley Pump Company of Easthampton, Mass., many years, but have never been mounted in this way until now.

The Drawback on Wire Rope.—In a letter to the Collector of Customs at Suspension Bridge, N.Y., O. L. Spaulding, Acting Secretary of the Treasury, says: "On the exportation of wire rope manufactured by the Williamsport Wire Rope Company of Williamsport, Pa., in part from imported wire, a drawback will be allowed equal to the duties paid on the imported wire used, less the legal deduction of 1 per cent. The drawback entry must specify for each kind of rope exported the actual amount of imported wire used, also the actual weight of the wooden reel on which the wire is rolled, the weight of the hemp cord constituting part of the wire, and the weight of paint used. In addition thereto the exporters will be required to furnish a small sample of the wire rope exported, about a foot in length, for the purpose of making verification of their entry."

An Endless Moving Platform.

A working model of the Multiple Speed and Traction Company's system of railways is now in operation in the Morse Building, this city. The system consists of an endless, constantly moving sidewalk made in three or more parallel sections. The first section—that next the stationary platform—moves at 3 miles an hour, the second at 6, the third at 9, and so on for any number of sections. The passenger steps from the stationary platform to that moving at 3 miles an hour and with equal ease and safety from each moving platform to the next. In the model the slow-moving platform consists of short sections, near one end of each of which is a pair of wheels of the usual form. The sections are so coupled together that the free end of one is carried by the wheels of the one adjoining. The construction was adopted to facilitate the rounding of sharp curves. These sections are cut away at the center so as to form a continuous opening a little wider than the distance between the wheels. In this opening is the second or quick-moving platform, which is formed of short sections provided on their under sides with rails which rest on top of the wheels. It is evident that if the first platform, carried on the axles of the wheels, moves at a certain speed, the central platform, carried on top of the wheels, will move at double this rate. It is also apparent that by making the wheels of the first platform small, and mounting series of larger wheels on the axles, the platforms can be arranged to meet the speed desired. A section of this railroad, elliptical in shape and 900 feet long, has been placed on an elevated structure on the Columbian Fair grounds in Chicago. Either cables or electricity may be used as a motive power. On the Chicago road the power is electricity furnished by a Thomson Houston generator of 107 horse-power. In this case the first platform travels 3 miles an hour, the other 6. No difficulty has been experienced in getting on or off.

The train shed of the passenger station of the Philadelphia and Reading Railroad, now being erected in Philadelphia, will have a span of 266 feet 10¾ inches, and center hight of 90 feet. It will be 553 feet long. This span is believed to be greater than that of any other train shed in the world.

A press dispatch from Ironwood, Mich. dated February 4, says: "The Norrie mine, at this city, whose output of 900,099 tons of iron ore in 1891 was the largest ever taken from any iron mine in the world in the same time, has just declared a dividend of $5 a share. This is in addition to the regular quarterly dividend of 25 cents. The output this season will reach 1,000,000 tons."

A plan to secure a permanent exhibition of Mexican products in New York City has been devised by Mr. Canton, a citizen of Yucatan, and is likely to go into effect after the close of the Chicago fair. Ten Mexican States are said to have promised their co-operation.

The required capital for Ex-Consul Porch's Mexican steamship line from Philadelphia not having been subscribed with due alacrity, three of the directors have resigned. There is said to be some defect in the concession from the Mexican Government.

The Speidel Economic Safety Hoist.

The accompanying drawing is a vertical section of a 2000-pound hoist made by J. G. Speidel of Reading, Pa. The construction is somewhat modified in the different sizes of hoists, but the principle remains the same in all.

It consists of a chain wheel, B, for the hand chain, on the other extremity of whose shaft is a pinion, C, keyed on, meshing into a large internally toothed spur wheel, G. On the same shaft is a sleeve, A, having a recessed disk, D, at the end toward the pinion, overlapping a flange, E, on the pinion, which has a circular shelf, leaving a space of about ½ inch between them. This circular ring is divided into four chambers by inclines on the pinion flange shelf. In each of these is placed a roller, F.

The large spur gear is keyed to its own shaft, H, as is also the hoist chain wheel I. One bearing of this shaft is carried in a crescent-shaped saddle, which rides on the outside of the flange D of the sleeve mentioned above, the lower side of this flange resting on a leather in the housings; so that if the sleeve moves, it must overcome friction due to one-half the load on the chain wheel.

In hoisting the rollers run down the inclines on the pinion flange; the crescent saddle is stationary, and no impediment is effered to the free operation of the hoist.

When tension on the hand chain ceases the load runs the pinion backward until the rollers, jamming in between the sleeve and pinion flanges, carry both around, the friction of the load between saddle and sleeve flange then preventing the load from running down. In order to bring it down it is necessary to continually apply enough force to overcome this friction.

The hoist chain passes from over the chain wheel down around the lower wheel, carrying the hook up to a pin on the frame of the hoist. By an ingenious arrangement a pawl may be dropped into the chain at the lower block, which doubles the speed of the hoist, but, of course, at double exertion on the part of the operator.

There is no increase of speed in lowering; the friction effectually sustains the load in any position.

From a report of the sub-committee of the Committee on Science and Arts of the Franklin Institute we quote:

The following is a tabulated statement of tests to conform to those made by the institute with other hoists:

Make.	Capacity.	Shortest distance between hooks.	Movement of hand chains to movement of hook.	Weight lifted.	Weight req'd to start load.	Weight req'd to keep load moving.	Per cent. useful effect.		Per cent. lost or wasted.	
Speidel.	2,000	27 ins.	18 ft. 6 in. to 7⅛ in. 31 1	550	28	24	63.1	73.6	36.9	26.6
				202	A mean of 41				41.1	

In order to lower the 202-pound weight it was necessary to exert a tension of 7 pounds on the hand chain.

To lower the 550 pounds it required 8 pounds to start and 4 pounds to keep up the motion.

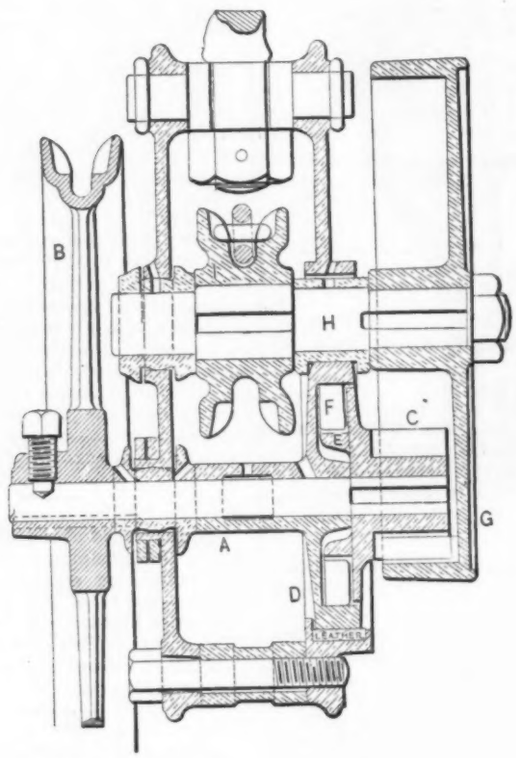
The useful effect is very high, and the only objection which can be made to the operation of the hoist is that the speed in lowering can not be any greater than that of lifting.

The design is neat and well proportioned.

The application of the friction lock by means of the rollers on the inclines is new in connection with these hoists and very ingenious.

The hoist is simple in construction and every part can be easily kept lubricated.

Your committee believe that Mr. Speidel has produced a novel and exceedingly efficient hoist, and recommend the award of John Scott Legacy Medal and Premium.



THE SPEIDEL ECONOMIC SAFETY HOIST.

The dynamite cruiser Vesuvius will have a final trial next month, when her projectiles, being manufactured by a Massachusetts firm, will be in readiness, and if not satisfactory she will be adapted to torpedo service.

THE WEEK.

The largest sailing vessel in the world, and one of the recent productions, is the steel five-masted ship France, built on the Clyde. The next largest is the Shenandoah, built at Bath, Maine, and launched November 6, 1890. Her length over all is 325 feet; length on water line, 308 feet; beam, 49 feet; depth, 29 feet; measures 3409 tons gross and 3258 tons net; can spread 11,000 square yards of canvas. A few months since this noble sailer beat five other vessels in a race from San Francisco around Cape Horn to Europe, and she has just arrived at this port in 36 days from Havre. A sister ship, the Roanoke, is now on the stocks.

Superintendent Sears of Boston's public schools, in an address on "Manual Training," before the Social Science Institute, referred to the apprenticeship problem. This will be solved, he said, by the establishment of schools for teaching trades, and the time will come when America will stop depending upon Europe for skilled workmen.

The low price of silver enables England to procure cotton from India on easier terms, but payment being in silver, the export demand is liable to increase.

In agricultural products alone Dominion exports for the six months ending December 31 exceeded those of the corresponding period of 1880 by $9,029,671, showing that if shut out from the United States the Dominion falls back on the mother country, but, of course, she would like reciprocity, all the same. To get even with the United States she abolished the sugar tax, which alone entails a loss of revenue equal to about $3,500,000.

Official information has been received from Germany and the British West India Islands that the recent reciprocity arrangement for the exchange of commercial products went into effect February 1.

A large train shed, mainly of iron, is to be built immediately by the Philadelphia and Reading Railroad in Philadelphia at Wayne Junction.

The vice-president of the Canadian Pacific Railroad has just returned from establishing agencies at various business centers in China and Japan, and speaks of the possibility of doing a very large trade. Canadian manufacturers contemplate sending agents to inquire into trade matters and to become acquainted with the requirements of the country, which is considered a step in the right direction.

It is said the Russian Government is about to make another great change in the social condition of the larger part of the inhabitants of that empire, in the direction of a step backward to serfdom. The proposition of the Czar now is to make a redistribution of land, and to exercise Government control over the care of the land and tillage. The product is to be divided, one-third to the Government, one-third to the community and one-third to the individual farmer. The latter is to have no ownership or control of the land beyond the right to work it.

A special committee of the Illinois Central Railroad Company, after investigating the subject, report that the development of electricity as a motive power has not yet

progressed far enough to warrant the company in attempting to use it in place of steam. Consequently soft coal will be used as heretofore.

Philadelphia merchants will send a cargo of corn to Russia via Antwerp.

The Treasury Department has contracted with John H. Dialogue of Camden, N. J., for the construction of a revenue steamer to be named the Hudson, at his bid of $36,500, with $150 for each additional foot of length. This boat is intended for service at the port of New York.

Efforts to find a market in England for California dried fruits are disappointing, cheaper grades having the preference.

Cuban planters are giving more attention to the culture of pineapples, which bring as high as 50 cents per dozen, gold.

Berlin manufacturers have successfully substituted Indian corn oil for Russian linseed oil in the manufacture of soap.

The new treaty with Germany designed to secure reciprocal advantages in the exchange of products is so limited in its character, so few articles being affected, that merchants in the trade manifest extreme indifference. Another reason for indifference is the manner in which business is done. Exporters here, it should be remembered, act simply as shipping agents. They have little business left to their discretion, but simply execute the orders they receive by cable, and receive their commissions for so doing. In this way they have little incentive to devote their time to studying out the effects of the new arrangement.

The prevalence of yellow fever in a deadly form at Santos, the chief port in Brazil for the coffee trade, certainly next after Rio, causes a terrible condition of affairs. A steamer just arrived at New York lost her chief officer and so many of her crew that the survivors were scarcely able to navigate her, and at a very recent date there were at Santos 240 ships detained by inability to discharge, among whom disease was making fearful havoc.

The extension of the postal delivery system on ocean routes favored by the Postmaster-General meets with discouragement in the bill introduced for a repeal of the present law. The bill is quite sure to meet with an impediment in the Senate and in the President's veto, should it by any chance go through both houses. In any case it could not very well abrogate existing contracts, four out of 53 routes having been let. But the fate of the bill may be an earnest of the action of Congress after March 4, 1893, should radical changes first take place, and may operate to retard the system in its widest application.

The export trade of Philadelphia in the January just past was the greatest in the history of the port. Forty-one transient steamships were loaded there with full cargoes of grain, and 15 regular line steamships took partial cargoes of grain, along with general merchandise, making a total of 56 vessels loaded for foreign ports.

New York parties are said to have effected a combination of the 14 rice mills in New Orleans, with the design of running only the four most profitable, and other parties are said to hold options on 14 of the 17 cotton presses in that city.

Corea has recently established a national mint, and has ordered her first battle ship in England. To raise the money she is said to have mortgaged her coal mines.

The Japanese ministry were defeated in Parliament in an attempt to reduce taxation. Instead of resigning the upper house was dissolved, the effect of which is to defer all proposed industrial and commercial enterprises one year.

The wheat shipping business of Tacoma has grown with phenomenal rapidity, and the city now ranks third among the wheat shipping points of the coast, and will soon advance to second place. It has shown a vast increase in 1891 over 1890. The shipments to December 15, by ocean freight, amounted to 2,371,287 bushels of wheat, and 44,533 barrels of flour, against 505,700 bushels of wheat and 33,000 barrels of flour for the same period in 1890. The coal production of the State is increasing with almost equal rapidity.

A floating dry dock costing in the neigborhood of $300,000 is now approaching completion at Tacoma, in the State of Washington. It is the largest on the Pacific coast, 235 feet long by 100 feet wide, and is large enough to receive and handle comfortably the largest vessels.

A coffee roasting plant, to cost $600,000, claimed to be the largest in the world, is about to be erected at Toledo, Ohio.

The Canadian trade returns show that the value of the exports for the six months ended December 31 last was $71,738,049, against $62,841,210 for the corresponding six months of the preceding year, a net increase of $8,896,839.

The iron trade is represented in the Russian Relief Committee of the New York Chamber of Commerce by Wm. E. Dodge, George A. Crocker and George L. Nichols.

The Commissioner of Agriculture for Dakota fixes the wheat crop of that State at 65,000,000 bushels, which is 13,000,000 bushels more than the Government estimate. Advance sheets of the Illinois crop report show an aggregate profit on corn of $32,108,150, against $18,390,810 for the preceding year.

The various equipment manufacturing companies should do a big business this year. The Burlington and Quincy arranged last week for the purchase of $4,000,000 new equipment. The Atchison is spending $2,500,000 and the Rock Island $2,000,000 for the same purpose, and the Pennsylvania and all the large systems are expending enormous sums in making additions to their equipment.

The double-screw ferry boat Washington, mate to the Cincinnati, for the Pennsylvania Railroad Company, is receiving her machinery at Jersey City. The engines are being constructed at the company's shops in Hoboken.

Great Britain refused to sanction the proposed treaty between the United States and Newfoundland, on the ground of discrimination against England. The same questions were involved in the treaty made with the British West Indies, but word now comes from Washington that the Imperial Government has ratified the agreement made with the representatives of the West Indies, although the Dominion authorities had previously made direct overtures for reciprocal trade without effect.

An intimation comes from Baltimore that the Reading and Baltimore and Ohio Railroads are negotiating for the purchase of the Western Maryland Railroad, with the object of making Baltimore an important coal shipping port.

The statistics of the grain export trade from New York are significant in showing the disappearance of the American ship. The fact appears from the record of Mr. Ferguson of the Produce Exchange that of 1238 vessels which carried cargoes of grain from this port during 1891, only 15 were sailing ships and only 25 were under the American flag. The number of American steamers was four, formerly of the American line from Philadelphia, and which represent the entire American marine in the grain trade to Europe. The amount of grain shipped of all kinds was 68,000,000 bushels.

The struggle for the possession of the Poughkeepsie Bridge is understood to have resulted in a reorganization to be known as the Central New England and Western Railroad Company, A. A McLeod, president. Seven Philadelphia directors give place to the same number from New York. By this deal Reading is supposed to have gained a leading position in the New England coal trade.

A commission appointed by the Massachusetts Legistature reports adversely to building a bridge across the harbor at East Boston on the ground that it would obstruct navigation.

Ex-Senator Ingalls is quoted in a Chicago dispatch as saying that the trouble with Chili was fostered by people who wanted money from Congress to build ships. He must have had in mind the old scandal about "the flag and an appropriation."

Word comes from the West that the grain blockade is as bad as ever, the eastbound freight so filling the roads that cars are returned with difficulty. According to one of the railroad presidents, the difficulty does not arise so much from the quantity of grain moving as mismanagement in handling the rolling stock. But little grain, it is stated, is being forwarded by roads to Kansas City. The New York Central is also blocked at Suspension Bridge.

About 1500 Japanese emigrants have sailed for Honolulu to work on the sugar plantations.

Sorry tales are told of the "busted boom in Kansas." While some sections of the State are prospering as never before, there are well-built towns in other parts which have no inhabitants. Saratoga, according to one account, has a $30,000 opera house, a large hotel and a number of business houses, but there is "nobody even to claim a place to sleep." At Fargo there is a $20,000 schoolhouse, but most of the buildings are said to have been "removed or torn down." Other examples are given of a well-built city, but no people. Specimens of failure in wild speculation may be found in other States than Kansas and convey an instructive lesson.

Four ships loaded with 18,000 tons of coal for Chili are under the agreeable necessity of returning with their cargoes.

The first suspension bridge in England was erected in 1741 across the Tees at Middleton. It was 70 feet span, and was erected for the use of miners. It consisted of two common chains stretched across the river and fixed into the rock at each side.

Philadelphia, through the Commercial Exchange, is making a desperate effort to divert to the port of Erie a portion of the grain trade heretofore moving through Buffalo and the Erie Canal to New York, and to this end the Pennsylvania Railroad officials are said to have arranged with the Philadelphia and Erie Railroad for a cut rate to meet the rates via Buffalo; but these statements are not wholly confirmed. A line of steamers to ply between Erie and the grain ports of the Northwest is spoken of. Last year Erie received but 10,600,000 bushels of grain, while Buffalo received 128,900,000 bushels. It costs Philadelphia merchants 13 cents per bushel freight on grain shipped to them from points in the western part of the State, while it costs but 15 cents per bushel to ship grain to New York, a much greater distance, from the same points.

The Iron Age

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JOHN S. KING, - - - - BUSINESS MANAGER.

Registering Foreign Tonnage.

Regardless of any question respecting the wisdom of the law that prohibits the carrying of the American flag by foreign built tonnage, the anomalous spectacle is presented of a considerable fleet of steamships coming into existence, which is of foreign build, and nevertheless is indistinguishable from the genuine American by the colors carried at the masthead. Exceptions are made where a vessel is wrecked and rebuilt in the United States at a cost two-thirds of its value. In addition to this, ships are being admitted under special laws and under various pretexts. There was Captain Gorringe's ship the Dessoug, for example, which brought over the Egyptian obelisk, and as a kind of compliment was admitted to American registry, and is now in the coasting trade.

The most notable exception was in the case of an enterprising firm of shipping merchants, Hogan & Sons of this city, who a year ago succeeded in obtaining from Congress a law allowing them to put two steamships of English build under the American flag, known respectively as the Mineola and Montauk. These vessels now constitute a line in the coastwise trade between New York and San Francisco, stopping at San Diego in California, and Pernambuco in Brazil. The owners are said to be much pleased with the financial results, the pioneer of the line having just completed her first voyage, and a regular fleet between New York and San Francisco is said to be in prospect. Encouraged by these precedents the proprietors of the Atlas Line of steamers, for many years trading between New York and the West Indies, have had bills introduced in the House to grant American registers to the British steamers Claribel, Alene and Athos. These steamers belong to a British corporation owned in and managed from Liverpool. It is not strange that complaint is heard among American shipowners of discrimination. As above noted, an American line of British-built vessels is competing with American bottoms in the San Francisco trade and no less directly with American mail steamers running to Brazil. Thus we are having "free ships," not by repealing the navigation laws, which to many are obnoxious, but by circumventing the statutes, under plausible pretexts of one kind or another. Common honesty and fairness dictate that if we are to have "free ships" the system be introduced regularly, in accordance with prescribed forms of legislation. Some who would willingly concede the expediency of admitting free ships in the transatlantic trade are far from surrendering the coastwise trade in like manner.

Figuring on Small Margins.

Manufacturers of staple goods are satisfied now with very small profits. The contracts taken for large quantities to be delivered months ahead, and in some cases covering an entire year, at prices which would seem to barely realize cost, show that manufacturers are disposed to forego all chances of an upward turn in values. Offers are known to have been made by manufacturers of their entire year's output at a slight advance over cost, based upon an inspection of their books. An instance has come under our observation in which a manufacturer controlling his own raw material has offered another concern in the same line his surplus production of raw material at actual cost for a fixed time, based upon an examination of the cost sheets by a disinterested party. Concern No. 2 had been figuring on an addition to the works covering this point, but the scheme was promptly abandoned on the receipt of such an offer. This condition of affairs indicates almost a revolution. Matters have been shaping for it for a long time, but only within the past few months has their full force been felt. The requirements of the country are now more than met in almost every line of iron and steel production, and it will take a very heavy increase in consumption to bring the demand up to anything like the supply. Manufacturers are losing hope that this will soon occur, hence their willingness to take such contracts as are above set forth.

Canadian Negotiations at Washington.

Reciprocity sentiments being popular in Washington just now, probably Canadians consider the time propitious for renewing overtures for better trade relations. That the Dominion Government sincerely desires a renewal of negotiations for a trade treaty with the United States cannot reasonably be doubted. It is now known that for the third time a Canadian commission is about to visit Washington to see what can be done. Sufficient time has elapsed to demonstrate the folly of pursuing a course respecting trade relations that not only causes mutual alienation, but is attended with serious disadvantages in every point of view, especially to the agricultural interests of the Dominion, upon which internal prosperity so much depends. Then in regard to the great public works of Canada, upon which enormous sums have been expended, experience proves that as an investment more is to be gained by amicable co-operation with capitalists in "the States," making common cause in business ventures, than in anything like rivalry and antagonism. In fact, whether in building railroads or ship canals, the inevitable tendency is to throw out branches and to interlock in a common system. And so of business in all departments. The current of trade and the boundary line are so nearly parallel and conterminous that to maintain bars of separation is seen to be impracticable, if not visionary and self-destructive. On the Canadian side it is seen that hostile tariffs strongly operate to promote the disintegration of the much-vaunted Confederation. In the East, on the Atlantic side, the Maritime Provinces yearn for freer trade with the States, so that the products of the mines and fisheries may be readily exchanged for American produce and manufactures, while in the extreme West Manitoba is fast forming closer trade alliances with the neighboring States. Population, too, is constantly drifting across the border, one way and the other. On the so-called "American" side, all the way from Boston to Chicago, there is a growing desire to remove trade restrictions, a feeling that the Canadian Pacific Railroad unwittingly is doing much to foster. Indeed, it may well be questioned whether that great transcontinental highway, originally designed at once to bind together the Canadian Federation and to unite the British Empire, whether in Europe or Asia, has not been an agency most potential in obliterating commercial distinctions between the neighboring populations.

Again, the growing acerbity of parties in the Dominion—the Liberals and the Tories—is an unhappy omen as concerns the perpetuity of that particular commercial relationship which has existed in the past. It is seen by Canadians of whatever party, whether the Ins or the Outs, that an amicable adjustment of international difficulties is devoutly to be desired, even though at the cost of important concessions. The Imperial Government having sanctioned trade alliances between the West India colonies and the United States, is not unlikely regarded as an omen favorable to the Dominion, which has long craved the privilege of exercising treaty powers, and otherwise cutting loose from the leading strings necessary to a condition of dependence and tutelage. On some accounts the time chosen for the resumption of negotiations at Washington seems auspicious.

After all, it may as well be confessed that the Liberals, who were defeated at the late election by a slim majority, would have a much better chance of agreement at Washington than the adherents of Premier Abbott.

A Chicago real estate paper has the following statement in the way of a market report: "There is good demand for manufacturing sites on the part of Eastern concerns, and while the amount of land available for this class of improvement is large, the field is none too broad for the uses of those who are ready to till it." The movement westward must be attaining very considerable proportions to justify such a use of language. The Eastern inquirer for a manufacturing site is more than an occasional visitor and the transactions for such purposes are not so rare as to be events in the history of real estate

dealers. The reporter writes as calmly and dispassionately as though he were talking of pork or pig iron.

Beams and Barb Wire.

Business prospects in the iron trade are somewhat clouded by the recent disruption of these two very important combinations. It goes without saying that even if these combinations were not working in a way altogether satisfactory to their members, the general iron trade would not have been affected in the slightest degree by their indefinite continuance. The sudden disruption of both, however, coming at a time when every one interested in the trade is doing his utmost to bring about an improved tone to business, has a decid edly dampening effect. Confidence in values of other articles is weakened, and orders are withheld until the full force of the shock can be perceived. It is unfortunate that these occurrences should have taken place just at this time, and yet perhaps the time is about as opportune as any that could have been selected. Even the rain never falls at a time to suit everybody.

The Beam Combination had outlived its usefulness and was demoralizing its members, and therefore its time had come. Those who were accustomed to honest, straightforward methods of doing business were becoming more and more disgusted with the petty means employed by some of their competitors to influence contracts. The agreements of the combination were being used for the restraint of those not disposed to indulge in underhand practices to secure orders. It almost invariably happens that laws and regulations are most carefully respected by those who would behave well without them. Such unsavory memories follow the demise of the Beam Combination that it seems now most unlikely to be revived in any form. Its disruption is especially hailed with pleasure in the West, where the consumption of beams is rapidly growing, but where the prices which were maintained by the combination were regarded as unwarrantably high. Under the circumstances, it is no wonder that the combination has been broken. On the contrary, the real cause of wonder is that the combination should have existed so long.

With regard to barb wire, it may be simply said that the power to control the trade of the country is not in the hands of any man or any set of men. The interests involved are too diverse. The scheme undertaken was too great to be carried out, except by the investment of a very much larger amount of money than the promoters could command. Their courage is certainly worthy of high praise, but credit for the brilliant conception will be totally effaced in the minds of men simply because it did not succeed. At first there was every appearance of success. A few manufacturers preferred to operate independently, but of these the most important were known to be ready to closely co-operate with the combination and it seemed quite reasonable to expect that in time even more intimate relations would be established. But a crucial time came when very dull trade set in. Prices were reduced by the combination, and it could not be charged with extortion. Yet, low as its prices were, they were evidently above the natural level of values, as shown by the prices of other wire products. The independent companies quoted under the combination price just enough to secure a very good part of the limited business current. Various schemes were proposed for the purpose of bringing all the manufacturers into line, but they failed of adoption, and there was no alternative but to abandon the whole project of controlling sales and let each manufacturer operate independently as of yore.

These two combinations were most formidable obstructions to the natural course of prices in their respective lines. Their termination results in some uncertainty as to the bottom of the market, but the situation will not remain so for any great length of time. The season is at hand when large contracts will be placed for just such classes of material as these, and the break in prices may lead to much greater purchases than would have been the case if the combinations were preserved intact.

A New Furnace Record.

January has brought with it a new furnace record, Edgar Thomson again putting the achievement to its credit. This time it was Furnace I which wrested from the famous F its laurels. The latter held the best month's record with a little over 11,000 tons, the best week being 2850 tons, and the best day 506 tons. Now Furnace I has reached the enormous output of 12,706 gross tons in the month of January, an average of nearly 410 tons daily. The best week was 3005 gross tons, and the best day 511 tons. The average fuel consumption was 1700 pounds. The record, however, possesses peculiar significance when some of the points are considered which were raised in the discussion following the reading of the famous paper by James Gayley on the development of American blast furnaces, with special reference to large yields, before the Iron and Steel Institute. E. C. Potter, referring to the work done by one of the Union furnaces of the Illinois Steel Company, said:

> Now, the question that presented itself to his mind in considering the performance of this furnace, and not only this one, but all of the 15 furnaces now owned by the Illinois Steel Company, was that they had found that invariably the smaller furnaces showed much the better work in regard to output, in comparison with their cubical contents and with their fuel consumption. The performance of the furnace he had just cited showed a product of nearly 2¼ tons of iron per each 100 cubic feet of capacity per day. Mr. Gayley's furnace, to equal this, must make over 12,000 tons per month, and he did not think that that was quite possible within the light of their present knowledge.

It will be observed that little more than a year has passed since that which Mr. Potter did not think quite possible has been achieved. Unless the smaller furnaces have in the interval done better work, the Edgar Thomson type can justly claim the victory.

Our Imports and Exports.

The Bureau of Statistics has just issued its monthly statement of the exports and imports of merchandise for December and for the calendar years 1890 and 1891. The leading features of this statement, so far as it deals with articles of interest to the readers of *The Iron Age*, may be summarized as follows:

Imports.

Among the articles imported duty free are only two classified as iron and steel manufactures, the first item being needles, of which the imports during the calendar year 1891 were $326,670, while from January 1, 1890, until October 6, 1890, when the new rates of duty went into effect, they were $72,286, the imports from October 6 until December 31 having been $213,397. The second item includes shot gun barrels, forged and rough bored, of which the imports during the calendar year 1891 were $116,021, against $19,777 for the period from January 1 to October 6, 1890. Among the other articles imported duty free are plumbago, of which the 1890 imports were 12,797 tons, valued at $594,746, compared with 10,618 tons in 1891, valued at $555,080. Finally, the imports of pig tin compared as follows: 16,911 net tons in 1890, against 20,573 tons in 1891.

In the dutiable list we have, first, the following imports of iron and steel and manufactures thereof:

Articles.	Quantities. Twelve months, ending Dec. 31. 1891.	1890.
Iron and steel, and manufactures of:	Tons.	Tons.
Pig iron	67,179	134,955
Scrap iron and steel, fit only to be remanufactured	44,429	56,277
Bar iron, rolled or hammered	18,100	24,034
Bars, railway, of iron or steel, or in part of steel	253	204
Hoops or ties for baling purposes, barrel hoops and hoop or band iron or steel, flared, splayed or punched	186	15,100
Hoop, band, or scroll iron or steel	685	6,077
Ingots, blooms, slabs, billets and bars of steel and steel in forms n. e. s.	34,676	28,636
Sheet, plate and taggers' iron or steel	11,882	9,041
Tin plates, terne plates and taggers' tin	327,808	329,435
Wire rods of iron or steel	46,938	55,427
Wire, and wire rope and strand, iron or steel	4,309	4,610
Manufactures of n. e. s.:		
Anvils	813	1,390
Chains	448	583

It will be observed that there has been a marked falling off in nearly every item on the list, with the exception of steel ingots, billets and bars. To what extent the foreign material thus imported goes out again under the drawback clauses is not quite clear, although the exports of domestic merchandise in wire and nails to some extent reflect it. The fact may be noted that during the past year manufacturers of wire in its different forms have imported chiefly billets, while in former years they brought in wire rods. The heavy decline in hoop iron is due to the lower prices at which the American product has been sold, while the decline in ties has grown out of the fact that the duty on

cotton ties has been advanced, and that the trade is now practically in the hands of the American producers.

The imports of manufactures of iron and steel for which values only are given were as follows:

Articles.	Values. Twelve months, ending Dec. 31. 1891.	1890.
Iron and steel, and manufactures of:		
Cutlery	$1,002,478	$2,381,726
Files, file blanks, rasps and floats	80,963	137,755
Fire arms	707,520	1,477,541
Machinery	3,204,827	2,590,348
Needles	...	213,397
All other	2,636,530	1,992,408

It must not be forgotten, however, that the values given refer to the invoice values at foreign points of shipment.

The imports of copper show a heavy increase, the fine copper contents of ores imported having risen from 6,017,041 pounds to 11,690,312 pounds, while the imports of bars and ingots and of old copper have advanced from 663,676 pounds to 3,154,557 pounds. As will be noted further on, heavily increased exports of American copper far offset this. Among the miscellaneous imports of foreign dutiable merchandise we may note an increase from $215,372 in brass and manufactures thereof in 1890 to $277,591 in 1891; a decline from 368,275 in 1890 to 199,996 last year in clocks and in parts thereof; an increase in lead and its manufactures from $1,821,837 to $2,873,573 in 1891; bronze manufactures declined from $906,455 in 1890 to $785,496 in 1891. The imports of spelter fell off from 1056 net tons in 1890 to 41 tons in 1891, while the imports of metals, metal compositions and manufactures thereof, not elsewhere specified, rose from $4,710,132 to $6,656,519.

Exports.

We tabulate below the exports of a number of articles of domestic manufacture. The exports of copper ore increased from 24,159 tons to 38,606 tons. This is nearly exclusively Montana copper matte, which may be estimated at 58.8 per cent., so that the copper contents show an increase from 31,800,000 pounds in 1890 to 50,800,000 pounds in 1891. The exports of ingots and bars increased from 10,890,058 pounds to the unprecedented total of 69,279,024 pounds, so that the exports last year were about 120,000,000 pounds of fine copper:

Articles.	Values. Twelve months, ending Dec. 31. 1891.	1890.
Agricultural implements:		
Mowers and reapers, and parts of	$1,876,019	$1,598,405
Plows and cultivators, and parts of	441,513	713,911
All other, and parts of	992,651	952,679
Brass, and manufactures of	444,101	395,950
Cars, passenger and freight, for steam railroads	1,925,913	3,378,919
Clocks, and parts of	1,206,867	1,311,256
Copper and manufactures of:		
Ore	6,565,620	4,413,067
Ingots, bars and old	8,844,304	1,346,401
All other manufactures of	293,619	158,927
Lead, and manufactures of	173,887	181,030
Plated ware	406,611	409,325
Quicksilver	145,502	93,192
Tin, manufactures of	250,411	262,343
Zinc, and manufactures of:		
Ore, or oxide	149,435	195,113
Pigs, bars, plates and sheets	278,182	126,291
All other manufactures of	38,921	23,587

In iron and steel the values involved are the following:

Articles.	Values. Twelve months, ending Dec. 31. 1891.	1890.
Iron and steel, and manufactures of:		
Pig iron	$258,000	$266,107
Band, hoop and scroll iron	9,354	545
Bar iron	85,382	97,317
Car wheels	116,179	89,107
Castings n.e.s	876,121	931,288
Cutlery	141,228	127,199
Fire arms	845,702	825,551
Ingots, bars and rods of steel	36,877	19,423
Locks, hinges and other builders' hardware	2,123,153	2,077,005
Machinery, n.e.s.	10,256,949	9,423,958
Nails and spikes:		
Cut	247,458	329,077
Wire, wrought, horseshoe and all other, including tacks	144,646	148,879
Plates and sheets:		
Of iron	24,665	47,623
Of steel	7,484	15,6 3
Printing presses, and parts of	356,589	304,448
Railroad bars or rails:		
Of iron	3,358	4,738
Of steel	360,130	573,178
Saws and tools	1,901,129	1,830,632
Scales and balances	313,652	306,576
Sewing machines, and parts of	2,955,890	2,889,574
Steam engines, and parts of:		
Fire engines	5,630	2 362
Locomotive engines	3,274,825	1,037,404
Stationary engines	250,923	275,255
Boilers, and parts of engines	734,145	632,513
Stoves and ranges, and parts of	252,634	231,828
Wire	889,981	851,198
All other manufactures of iron and steel	4,264,232	3,661,726
Total	30,736,319	27,000,134

It will be observed that the exports of cut nails fell off somewhat, while the export in wire increased quite considerably. The totals are very gratifying on the whole, the increase being from $27,000,000 to nearly $31,000,000.

Quantities are given only in a few instances. These we tabulate below:

Articles.	Quantities. Twelve months, ending Dec. 31. 1891.	1890.
Iron and steel, and manufactures of:	Tons.	Tons.
Pig iron	14,946	16,341
Band, hoop and scroll iron	163	6.2
Bar iron	1,340	1,068
	No.	No.
Car wheels	14,227	11,082
	Tons.	Tons.
Ingots, bars and rods of steel	532	154
Nails and spikes:		
Cut	4,635	5,999
Wire, wrought, horseshoe, and all other, including tacks	848	821
Plates and sheets:		
Of iron	344	513
Of steel	104	214
Railroad bars and rails:		
Of iron	160	104
Of steel	11,079	16,844
	No.	No.
Steam engines, and parts of:		
Fire engines	1	2
Locomotive engines	357	137
Stationary engines	338	282
	Tons	Tons.
Wire	11,873	10,405

The exports of nails and wire indicate how large the quantity of foreign billets, slabs and rods are used for the export trade, under the drawback arrangement. Roughly, the quantity reached nearly 20,000 tons in 1891.

The Ohio Society of Surveyors and Civil Engineers, at its recent meeting in Columbus, elected C. H. Burgess of Cleveland to the presidency.

Pig Production Stationary.

As yet there are no signs that relief is to come to the depressed pig iron markets of the country through a reduction in the output. Very few of our correspondents hint that they will give up the struggle, although some districts are accumulating iron at a rate which must soon force them to face the necessity of banking.

The weekly product of all the furnaces on February 1 compared as follows with that of preceding periods:

	Furnaces in blast.	Capacity per week. Gross tons.
February 1, 1892	306	187,383
January 1	305	188,082
December 1, 1891	298	188,135
November 1	304	187,685
October 1	306	181,615
September 1	299	170,846
August 1	296	169,576
July 1	293	171,115
June 1	258	146,782
May 1	227	115,590
April 1	228	113,483
March 1	257	134,536
February 1	294	146,050
January 1	302	167,599
December 1, 1890	340	183,846
November 1	342	177,958
October 1	336	179,263
September 1	323	171,776
August 1	324	164,798
July 1	336	175,727
June 1	345	180,791
May 1	344	180,099
April 1	344	178,474
March 1	343	180,991
February 1	334	173,651
January 1	333	174,098
December 1, 1889	328	169,151
November 1	323	165,225
October 1	311	151,057
September 1	294	134,068
August 1	286	145,899
July 1	285	141,419

The following table summarizes the status of the anthracite furnaces:

Anthracite Furnaces, February 1, 1892.

Location of furnaces.	Total number of stacks.	Number in blast.	Capacity per week.	Number out of blast.	Capacity per week.
New York	19	7	3,374	12	4,648
New Jersey	12	2	868	10	3,243
Spiegel	3	3	221	0	0
Pennsylvania:					
Lehigh Valley	47	31	11,208	16	4,743
Spiegel	1	0	0	1	56
Schuylkill Valley	31	18	8,374	13	4,730
U. Susquehanna Valley	16	9	3,162	7	1,772
L. Susquehanna Valley	16	10	4,020	6	1,947
Spiegel	1	1	600	0	0
Lebanon Valley	15	11	6,296	4	876
Totals	161	92	38,124	69	22,015

For a number of months past our records show the following:

	Furnaces in blast.	Capacity per week.
February 1, 1892	92	38,124
January 1	94	38,307
December 1, 1891	85	34,905
November 1	87	33,802
October 1	85	32,459
September 1	82	31,214
August 1	88	32,860
July 1	92	37,892
June 1	91	36,561
May 1	90	35,331
April 1	91	36,598
March 1	93	38,543
February 1	95	40,212
January 1	101	43,166
December 1, 1890	105	43,474
November 1	104	42,141
October 1	100	38,627
September 1	104	39,115
August 1	106	41,013
July 1	112	42,543
June 1	117	45,142
May 1	123	46,912
April 1	119	46,110
March 1	115	45,790

Anthracite furnace capacity has changed but little, the blowing out of some plants being nearly compensated for by the starting of others. Among those which have stopped are Cedar Point, on the 20th ult., Keystone, in the Schuylkill Valley; one Bethlehem and one Lock Ridge, in the Lehigh; one North Branch, on the Upper Susquehanna, and one Pennsylvania Steel, on the Lower Susquehanna; Leesport and

the new Swede, on the Schuylkill; one Crane, on the Lehigh; one Lackawanna and one Bird Coleman have resumed.

The position of the coke furnaces was as follows:

Coke Furnaces, February 1, 1892.

Location of furnaces.	Total number of stacks.	Number in blast.	Capacity per week.	Number out of blast.	Capacity per week.
New York	6	3	3,374	3	2,055
Pennsylvania:					
Pittsburgh district	25	21	30,635	4	5,296
Spiegel	1	1	1,256	0	0
Shenango Valley	17	15	12,655	2	1,125
Juniata and Conemaugh Valley	17	10	5,633	7	2,625
Spiegel	1	1	339	0	0
Youghiogheny Val	5	1	929	4	1,645
Miscellaneous	4	1	653	3	1,678
Maryland	5	4	3,070	1	930
West Virginia	4	3	2,908	1	250
Ohio:					
Mahoning Valley	15	10	9,738	5	3,861
Central & Northern	16	13	11,733	3	2,397
Hocking Valley	14	4	1,428	10	2,513
Hanging Rock	15	7	1,523	8	1,870
Indiana	2	1	218	1	180
Illinois	18	13	16,209	5	5,464
Spiegel	1	1	1,250	0	0
Wisconsin	4	2	1,581	2	1,500
Minnesota	1	1	700	0	0
Missouri	6	1	782	5	2,760
Colorado	2	0	0	2	920
The South:					
Virginia	18	13	7,106	5	2,853
Kentucky	4	3	1,332	1	310
Alabama	37	26	17,355	11	5,780
Tennessee	12	10	4,934	2	850
Georgia	2	1	742	1	303
North Carolina	1	1	125	0	0
Totals	253	167	138,268	86	47,165

As compared with previous months, the active coke furnaces make the following showing:

	Furnaces in blast.	Capacity per week.
February 1, 1892	167	138,268
January 1	163	138,611
December 1, 1891	162	142,747
November 1	162	142,152
October 1	163	135,997
September 1	161	127,664
August 1	154	125,736
July 1	150	122,422
June 1	124	100,165
May 1	98	70,529
April 1	96	67,570
March 1	113	85,093
February 1	125	94,473
January 1	143	112,153
December 1, 1890	168	127,634
November 1	168	122,555
October 1	170	127,247
September 1	156	119,757
August 1	150	113,040
July 1	163	120,673
June 1	167	123,340
May 1	169	122,489
April 1	173	121,560
March 1	169	122,595
February 1	169	118,568
January 1	169	119,396
December 1, 1889	162	116,319
November 1	160	112,269
October 1	154	102,454
September 1	141	90,744

The producing capacity of the Pittsburgh district has been increased by the starting of one Isabella. One of the Edgar Thomson furnaces, which was on manganiferous iron during a part of January, is now again on Bessemer pig. We deal editorially with the wonderful record of Edgar Thomson "I," which now holds the record. Since the beginning of the month Edith Furnace of the Oliver Iron and Steel Company, and No. 2 Lucy have started, so that the capacity at work in the Pittsburgh district is considerably larger at this writing than on the 1st inst. for which the figures were made up. Mohawk Furnace in New York has probably started to-day. The Shenango Valley is running practically at full capacity. On the Juniata Rockhill blew out No. 1 on the 12th ult. Blair Furnace of the Cambria Iron Company is producing spiegel. Among the Pennsylvania furnaces which we class under "Miscellanous," Rebecca is now idle

In accordance with the indications furnished by the published report of product we have cut the capacity of the furnaces of the Maryland Steel Company down to 4000 tons per month, the concern in question being one of the few who do not report output upon which a close estimate can be based.

In Ohio, Dover Furnace has resumed, and the stack of the Cleveland Iron Company is probably producing again at this writing. We may notice that Bellaire Furnace has been doing exceptionally heavy work lately, having made in February what is probably the largest output on record in the Wheeling district. Production in the Hanging Rock district has fallen off through the blowing out during January of Ironton and No. 1 Wellston.

The Illinois Steel Company have started the fourth of their great new plant, and have added another active furnace at Joliet. On the other hand, however, one of the Union furnaces is out. We may note that Iroquois did good work in January. In Wisconsin one of the Bay View furnaces of the Illinois Steel Company is now idle. Minerva will soon be running.

The South has another new furnace at work in the Iron Gate in Virginia. Otherwise there has been little change.

The position of the charcoal furnaces was as follows:

Charcoal Furnaces, February 1, 1892.

Location of furnaces.	Total number of stacks.	Number in blast.	Capacity per week.	Number out of blast.	Capacity per week.
New England	14	6	470	8	560
New York	6	3	375	3	240
Pennsylvania	13	4	210	9	790
Maryland	7	2	234	5	502
Virginia	13	1	40	12	820
Ohio	9	2	215	7	608
Kentucky	3	1	450	2	535
Tennessee	6	3	810	3	382
Georgia	3	0	0	1	660
Alabama	13	10	2,371	3	750
Michigan	20	10	3,292	10	2,609
Missouri	2	2	626	0	0
Wisconsin	5	3	1,453	2	490
Texas	4	1	220	3	678
California	1	0	0	1	120
Washington	1	0	0	1	170
Oregon	1	1	225	0	0
Totals	121	49	10,991	72	9,914

As compared with previous months, the record stands as follows:

	Furnaces in blast.	Capacity per week.
February 1, 1892	49	10,991
January 1	48	11,164
December 1, 1891	52	11,033
November 1	55	11,731
October 1	58	13,159
September 1	56	11,968
August 1	54	10,980
July 1	50	10,801
June 1	44	10,056
May 1	59	9,730
April 1	41	9,295
March 1	51	10,890
February 1	56	11,365
January 1	59	12,280
December 1, 1890	67	12,738
November 1	70	13,262
October 1	66	13,389
September 1	63	12,904
August 1	59	10,745
July 1	61	12,511
June 1	61	12,312
May 1	52	10,698
April 1	52	10,804
March 1	59	12,606
February 1	58	11,378
January 1	59	11,485
December 1, 1889	66	12,779
November 1	67	12,893
October 1	63	12,047
September 1	60	11,327

Work has been resumed during January by the Landon in Connecticut, Hecla in Pennsylvania, Muirkirk in Maryland, Grand Rivers in Kentucky, Olive in Ohio, Sligo in Missouri, Ætna in Tennessee, Jenifer in Alabama and Jefferson in Texas. Old Alcalde in Texas started on the 3d, and the Star and Crescent in the same State will resume in about a month. Among those who have stopped in January are Kent in Connecticut, Boiling Springs in Pennsylvania, Bellefonte in Kentucky, Jefferson and Madison in the Hanging Rock region and La Grange in Tennessee, Fond du Lac in Wisconsin is banked on account of the scarcity of charcoal and Gadsden in Alabama lost two weeks through high water.

The stocks of charcoal iron remain stationary in spite of the large number or charcoal furnaces idle during the month of January. On February 1, 50 furnaces, of which 22 were idle, whose aggregate weekly capacity is 12,234 tons, held 173,797 tons of stock, as compared with 172,043 tons reported by the same number of furnaces on the first of the year. There has been a falling off in the figure for Michigan from 80,779 tons on the first of the year to 76,156 tons on February 1. The four charcoal producers in Wisconsin held 25,262 tons of stock.

A slight falling off is noticeable among the anthracite furnaces, the stock figure falling from 142,677 tons, held by 60 furnaces, on January 1 to 132,544 tons on February 1, reported by 56 furnaces, whose producing capacity is 22,380 tons per week. The greater part of this stock is held in New York and Pennsylvania, the former reporting 42,320 tons, Schuylkill Valley 26,797 tons and Lehigh Valley 35,234 tons.

The coke producers have added considerably to their stock, the figure rising from 374,691 tons, reported by 124 furnaces, on January 1 to 416,562 tons, reported by 105 active and 11 idle furnaces, with an aggregate weekly capacity of 93,200 tons, on the 1st of February. The most noticeable increase has taken place in Shenango Valley, Pa., where the amount rose from 57,020 tons on January 1 to 72,502 tons on the 1st of the present month. A general increase has also taken place throughout the other districts producing coke.

MANUFACTURING.

Iron and Steel.

The new butt-weld mill of Duquesne Tube Works Company, at Duquesne, Pa., has been put in operation, and that concern now have facilities for turning out any sized pipe from ⅛ to 2 inches in diameter.

Furnace A of Carnegie Brothers & Co., Limited, at Braddock, Pa., which has been rebuilt, is about ready for blast, and will go in some time this month. The hot blast stoves in connection with the furnaces have also been rebuilt.

George W. Johnson, proprietor of the Arethusa Iron Works, at New Castle, Pa., has decided to double the capacity of the finishing department of that plant. It is expected that the additions made, when completed, will give employment to about 175 additional men. New heating furnaces, rolls and engines will be added, and the total cost of the improvements and additions will aggregate very nearly $100,000. At present the plant is giving employment to considerably over 200; 1000 tons of sheet and plate iron are turned out every month, and the annual business of the concern amounts to $700,000. The additions to be made are expected to increase the annual output of finished sheet and plate iron to about 2000 tons per month, or 24,000 tons annually, which will give the Arethusa Iron Works an output as large as any similar concern in the country.

The Lockhart Iron and Steel Company of Pittsburgh, whose works are located at Chartiers, in that city, have recently started the Siemens furnace, built for them by Alex Laughlin & Co., engineers and contractors, of Pittsburgh, and are much pleased with the results so far obtained from it. The Brilliant Steel and Iron Company of Brilliant, Ohio, have also successfully started the fuel-gas plant built for their new mill by the same firm.

Lucy Furnace No. 2 of Carnegie, Phipps & Co., Limited, at Pittsburgh, which has been undergoing repairs for some time, resumed operations last week.

Mill B of the Catasauqua Mfg. Company of Ferndale, Pa., has commenced running double turn.

The Chickamauga (Ga.) Company, mention of which was recently made in these columns, have had the Round Mountain coal tested as to its coking qualities and express themselves gratified with the result, and they are now

preparing for the erection of a large blast furnace. Active operations on the coke ovens will commence at an early day, and with the large amount of capital now available to the company they will at once commence the development of their property on an extensive scale.

It is stated that a 50-ton furnace is to be erected at Steelboro, Texas, by the New Birmingham Wagon and Plow Company.

Several furnaces in the Birmingham region are contemplating erecting ore washers, as it has been fully demonstrated to them that there are large benefits to be derived from their introduction.

The Detroit Steel and Spring Company's works are running to their fullest capacity, employing about 275 hands. The output last month was greater than during any similar period in the company's existence. Over 600 tons of railroad springs were manufactured in addition to a large output of forgings.

Adolphus Hegewich has been removed from the receivership of the United States Rolling Stock Company of Anniston, Ala., and William C. Lane of New York City has been appointed in his stead. Supt. W. H. Chaddock and the entire office force have been notified that they are no longer wanted. Work has been stopped in all departments except the rolling mill, which has some large orders for car axles. It is stated that the administration of Receiver Hegewich has been very unsatisfactory to the Anniston stockholders. It is understood that the new receiver will either operate the works on full time or sell them to some one that will. The plant was built to work 1200 men, but under Receiver Hegewich, who has had control for about 14 months, the number employed has seldom been over 300 and often less than 100. The new receiver has filed a certified bond in the sum of $200,000 in the United States County Court Clerk's office.

E. L. Henning, Albert H. Sears and James L. Hatch have incorporated the Plano Steel Company, at Plano, Ill., with a capital stock of $50,000.

In the United States Court at St. Louis, a decree of foreclosure and sale of the St. Louis Ore and Steel Company's property was made by Judge Thayer, on the petition of the Farmers' Loan and Trust Company of New York. The property, which comprises the Vulcan Iron Works in Carondelet, a railroad at Grand Tower, Ill., and several coal mines, is to be sold next April.

The cast house of the Lehigh Furnace Company at Allentown, Pa., has been partially destroyed by fire.

The stock house of the Tassie Belle Furnace, at New Birmingham, Texas, has been burned and the furnace somewhat damaged. The loss is $12,000. The work of repairing is now going on.

A company with a capital stock of $50,000 has been formed at Beaver Falls, Pa., for manufacturing drawn steel under the Moltrop patents.

The Harris Forge and Rolling Mill Company of Irondale, Minn., have been incorporated, with a capital stock of $400,000.

Machinery.

The Leechburg Foundry and Machine Company of Pittsburgh, Pa., have just placed a new pickling machine on the market, one of which has already been tested, and will be sent to Wallace, Banfield & Co., Limited, proprietors of the Irondale Rolling Mill, at Irondale, Ohio. It is understood that the test was very satisfactory.

It is announced that the Pennsylvania Company, operating railroad lines west of Pittsburgh, are designing a new engine for heavy passenger traffic. The plans are being prepared by Superintendent of Motive Power F. D Casanave, E. O. Wall of the Pittsburgh, Cincinnati, Chicago and St. Louis Railroad, and R. Ely of the Pennsylvania Railroad. The new design of engine will have ten wheels, with 19 x 24 inch cylinders, boilers 62 inches in diameter and 68-inch high drivers. They will weigh 120,000 pounds, and be known as class X. The standard class O was about 85,000 pounds. The fire box at the front end will be deepened, and the diameter and number of tubes increased.

The plant of the Union Switch and Signal Company, Swissvale, Pa., is now running 15 hours per day, and, it is expected, will soon be in operation both day and night.

The Union Switch and Signal Company of Pittsburgh have just been awarded a very large contract in Chicago. It is the fitting of the Stewart avenue crossing, one of the most dangerous places in that city, with the company's well-known system of signals, the Westinghouse electro-pneumatic apparatus. There are 84 signals on the plan, 37 single switches, 22 double slips, 22 movable frogs, and all operated from a machine having 48 working levers and six spare spaces. The dispatcher will be on a raised platform in a bay window and in such a position that he can see all parts of the system. The main air pipe will be 3 inches in diameter, and, with the wires, will be run underground. Each signal will be illuminated by a 16-candle power electric light, derived from a Westinghouse plant of 125 light dynamos. Each of the main tracks will have a track circuit annunciator. The whole machine for operating the switches will be only 24 x 5 feet. It has taken several years to perfect even the plan for the work.

The Harrington & King Perforating Company of Chicago have certified to the Secretary of State of Illinois that their capital stock has been increased from $20,000 to $100,000.

The National Supply Company, Manhattan Building, Chicago, have just shipped a complete set of the Reid oil burners, for which they are sole agents, to Siemens & Halske, the great electrical firm of Berlin, Germany. The shipment comprises an outfit for baking pottery, melting brass, annealing steel, heating boilers and operating a reverberatory furnace, or five in all, which will be used in various departments of the firm's works. The same company a short time since sent a supply of National oil burners to Lima, Peru.

The Western Iron and Supply Company of St. Louis, representing the Lukens Iron and Steel Company of Coatesville, Pa., took an order a few days ago from the Atlanta Machine Works for the steel to be used in the construction of 15 boilers for the Atlanta Water Works. Thirteen mills were bidding for this order, and it is said upward of 70 boiler makers were competing for the work.

The business of John Steptoe & Co., for so many years located on West Second street, Cincinnati, Ohio, has been removed to 179 and 181 East Pearl street, same city, where they occupy premises 40x100 feet, which have been fitted up with the latest improved machinery, especially adapted for the production of the company's specialty, crank and geared shapers.

Waterford, N. Y., will soon lose the Button Fire Engine Works, the company having joined the American Fire Engine Company, with headquarters at Senaca Falls, N. Y., and Cincinnati, Ohio. The entire machinery of the Button Works will be removed to Seneca Falls, where the Button, Clapp & Jones and Silsby engines will be made. A number of the employees at the Waterford shops have been dispensed with, but all are given the preference of positions at Seneca Falls.

The Lincoln Iron Works of Rutland, Vt., have recently made additions to the buildings of the plant and put in considerable new machinery. Operations will soon be begun in the addition to the foundry. Work was begun on this building late in the fall. The cupola, where the iron is melted, has some new features, the invention of Superintendent Patrick. They are the arrangements in the wind chamber and tuyeres. The cupola is 3 feet in diameter and 30 feet high. There are eight tuyeres. The new building is well lighted, there being 26 windows, each of which has 24 lights 10 by 16 inches. A charging room, 10 by 30 feet, is on the second floor. In it is a No. 4 Sturtevant fan, which drives the air into the cupola. Stairs and a freight elevator with a capacity of 1½ tons connect the foundry with the charging room. This foundry was especially designed for light castings, while the heavy castings will be done in the old foundry as heretofore. The capacity of the foundry has been doubled. In the building adjoining the machine shop has been placed a Powell planer, which makes two in daily use. It is used for planing iron and weighs 16 tons, is 48 inches wide, 48 inches high and 15 feet long. A new machine in the large shop is a Flather planer, 30 inches wide and 9 feet long. Another new machine is a 28-inch upright drill. An interesting piece of labor-saving apparatus is a Jones & Lamson screw machine, 2 by 24 inches, with a turret head. The machine is designed especially for making set screws, varying in size from ¼ inch in diameter to 2 inches. An ordinary-sized screw is made in about two minutes. A Lodge & Davis universal milling machine has also been added. The works are running on full time with a large force and the men work three nights in the week until 9 o'clock. Superintendent Patrick says that business was never better. The works are now lighted by 11 arc and six incandescent lamps.

The Salem Foundry and Machine Shop, Salem, Mass., report a steady increase of sales in freight elevators, and that with increased facilities and improvements, they are in a position to promptly fill all orders. They have recently shipped two of their large capacity elevators to John L. Roper, Norfolk, Va., two to the Pacific Mills, Lawrence, Mass., and two to the Steel Edge Stamping and Retinning Company of Millis, Mass., and one each to the following: Wamsutta Mills, New Bedford, Mass.; Pairpoint Mfg. Company, New Bedford, Mass.; Royal Fertilizer Company, Charleston, S. C.; Norwich Lock Mfg. Company, Roanoke, Va.; W. H. Warren Machine Tool Company, Worcester, Mass.; River Spinning Company, Woonsocket, R. I.; Hartford Cycle Company, Hartford, Conn., and Clifton Mfg. Company, Clifton, S. C.

The iron works of Haugh, Ketchum & Co., near Indianapolis, were almost completely destryed by fire Sunday morning. The company at the present time have in course of construction a large amount of material for the Government building at the World's Fair. Loss $150,000.

The American Foundry and Machine Company's plant at Bowling Green, Ohio, has been burned. The company will rebuild.

Keely Bros., Goshen, Ind., will operate a machine shop in connection with their foundry.

Fay & Scott, Bangor, Maine, will add an extension 90 x 50 feet to their machine shop.

The business and stock of the Scranton Supply and Machinery Company Scranton, Pa., has been disposed of by Wm. H. Taylor to a corporation, the Scranton Supply and Machinery Company, who will continue the business. There will be no material change in the management of the new company, whose officers are as follows: William H. Taylor, president: William S. Boyd, Jr., vice-president; Henry W. Kingsbury, secretary and treasurer.

Hardware.

Concord Axle Company, Penacook, N. H., advise us that their works are running to their fullest capacity on orders, with a prospect of being fully employed during the coming year. They report their Original Concord and the Concord express axles as in good demand, the sales in 1891 having been larger than in any previous year.

S. L. Allen & Co., Philadelphia, state that the prospects for trade generally are very bright, and judging by the orders they have already booked for the coming season business will be much heavier than ever before in their history.

Hart Mfg. Company, Cleveland, Ohio, advise us that home trade has been a trifle dull with them of late, but at the present time it seems to be picking up a little. Export trade, on the contrary, has been good, and within the past few weeks they have shipped some large orders to Germany and the Australian colonies. The company look for a good year's business.

Hartford Machine Screw Company, Hartford, Conn., state that orders for regular standard work are increasing materially, while for specialties, such as bicycle parts, electrical work, &c., there seems to be a very heavy demand, and they have been compelled to add largely to their facilities in the latter department. The company look for a prosperous business during the ensuing 12 months.

Curtis & Curtis, Bridgeport, Conn., advise us that on the 19th ult. they shipped to the Pacific Coast on one order 14 large pipe-threading machines.

Boston Blower Company, Boston, Mass., are quite busy, running their shop until 10 p.m. at present upon several contracts for heating apparatus, dry kiln machinery, Government work for new cruisers and special machinery of various kinds.

W. B. Barry Saw and Supply Company, Indianapolis, Ind., advise us that there has been a decided brightening up in their business since the first of the year, and they look for a good trade during 1892.

Eastman & Krauss Razor Company, Stapleton, S. I., and 98 Chambers street, New York, report a very satisfactory trade, with good prospects for 1892.

Pike Mfg. Company, Pike Station, N. H., refer to trade as the best in their career, the business of last year having exceeded by 40 per cent. the previous year's business. They have just completed their new scythe stone factory at Pike Station, which, with the one finished last year in Vermont, gives them exceptional facilites for turning out these goods. As they own or control the best scythe stone and oil stone quarries and have the pick of them to work from, they are selecting the rock from the very best quarries of the different kinds and putting on the market scythe and oil stones of excellent quality. For their own benefit they are now branding their trademark upon the boxes and labels of their best goods.

At the annual meeting of Silver Plate Cutlery Company, Birmingham, Conn, held January 19, 1892, the following Board of Directors was elected: D. W. Plumb, Geo. H. Peck, J. R. Brinsmade, D. S. Brinsmade, and Smith A. Abbott. The board elected the following officers for the ensuing year: D. W. Plumb, president; Geo. H. Peck, vice-president, and J. R. Brinsmade, secretary and treasurer.

TRADE REPORT.

The developments of the past week have emphasized the tendency developed in January, and what little hopeful feeling did exist seems to be gradually dying out. Pig Iron production continues unabated at the enormous rate, and is telling in nearly every direction. Southern producers are carrying larger stocks than ever, and are represented as having fallen into a state of discouragement. Bessemer Pig in Pittsburgh is weakening, and threatens to relapse to the former low figures. As we stated months since, the key to the situation is the Rail trade, and that has not come up to expectations since the opening of the year. The Eastern mills are doing very little and the Western works, with their enormous capacity, can take care of a good deal more than is now in sight.

Sales of domestic Ore are hanging fire, after the purchases of the two great Steel companies, and higher rates of freight, caused by lessened shipments of grain, are checking sales of foreign, which was sold as low as 7¢ a unit, ex-ship, for good Bessemer grades.

The most serious news of the week is the announcement that the understanding the Pittsburgh and Wheeling Billet makers reached in the conference held is being violated. The extent of the concessions is not yet clearly manifest, but the statement is made by buyers that they have offers as low as $23.50. The understanding among the Billet makers has been alluded to as a combination. It never took that shape.

The conferences were informal. Nothing but a moral obligation existed. The weakening has apparently spread to Wire Rods, to judge from the offerings made at Eastern points by Western mills.

In the Structural Iron trade Beams continue to monopolize attention. From New York comes the report of the first season contract, involving 5000 tons, which was captured at 2¢ at mill. At Boston 2.25¢ has been named. Some of the newspapers have alluded to the possibility of a new pool, which might follow a concession to the demands of the Western mills. These writers do not understand the situation. A new pool cannot be formed on the old lines. It could only be done by the establishment of a joint selling agency. The experience in the devious ways of irresponsible selling agents has been too much for some of the oldest and powerful mills in the old combination.

There are indications of weakness in Track Material and in Merchant Steel.

Metals are moderately active, but are tending toward a lower level.

Philadelphia.

Office of *The Iron Age*, 220 South Fourth St., PHILADELPHIA, Pa., February 9, 1892.

Developments in the Iron trade during the past few days have not been of a character to inspire very strong hopes of early improvement. The demand does not increase, which is equivalent to saying that prices are weak and unsettled, and with so large a production it is hard to see how matters can improve without some radical change, either in demand or supply. No one seems to entertain thoughts of limiting their output, so that the only ground for expecting a better condition of affairs is through a heavier demand. This the trade have been expecting continuously since last fall, and their faith on that point is still strong, although the delay is most trying. There are no good or sufficient reasons for changing ideas on that subject, so far as any one can see, but after so many postponements it requires a good deal of courage to reiterate that things are on the eve of an improvement without seeing some actual movement in that direction, which it must be confessed is not the case at present.

Pig Iron.—Market as dull and as heavy as at any time for months past. There is just so much Iron wanted, and to that extent it can be sold, but no more. Holders recognize that there is very little use in pressing sales beyond a reasonable limit, because it is not a matter of price, which every one agrees is low enough. Consumers have got into the habit of buying from hand to mouth, and for the present they see no reason for abandoning a policy which has been a satisfactory one for several years past, and as the market is amply supplied with material of all grades these methods are likely to be followed out until there are some definite indications that the character of the market is likely to be changed. For the present it must be conceded that the outlook is not encouraging, although on general principles the market ought to be better. When an article is selling at bare cost of production, or a little less, it is usually a safe purchase. This ought to be the case with Pig metal, but, as already stated, it will require some signs of a definite movement to attract attention, which will probably not be until large buyers have cleaned up all the odds and ends, at lower figures than the nominal quotations of to-day. Asking prices for Philadelphia and near-by deliveries are about as quoted below, but in some cases inside figures have been shaded, and for deliveries at points 50 to 100 miles South or West as much as 25¢ to 50¢ ₱ ton has been knocked off, and even then buyers are not in the least anxious to take large lots.

American Scotch, No. 1x	$18.00	@	$18.50
American Scotch, No. 2x	17.00	@	17.50
Standard Penna. (Lake Ore), No. 1x	17.50	@	17.75
Standard Penna. (Lake Ore), No. 2x	16.50	@	16.75
Standard Penna. (Lake Ore), No. 2 plain	16.00	@	16.25
Lehigh and Schuylkill, No. 1x	17.00	@	17.50
Lehigh and Schuylkill, No. 2x	15.50	@	16.00
Standard Virginia, No. 1x	17.00	@	17.25
Standard Virginia, No. 2x	16.00	@	16.25
Medium Va. and Southern, No. 1x	16.00	@	16.50
Medium Va. and Southern, No. 2x	15.00	@	15.50
Standard Penna. and Virginia Forge	15.00	@	15.25
Ordinary Forge Cinder mixed	14.00	@	14.25
Hot-Blast Charcoal	20.00	@	22.00
Cold-Blast Charcoal	25.00	@	27.00

Muck Bars.—Market very unsettled, and with little or no demand. One or two small lots have been placed at $26.50 @ $26.75, delivered, while in other cases a very fair quality of Bar has been offered at $25.50 and not taken. The market is limited, and only a first-class article is called for at present.

Steel Slabs and Billets.—Nothing doing of any account, so that the position is virtually the same as last week. Makers want business badly, and are willing to quote low prices for February deliveries, but for later dates they ask 25¢ @ 50¢ a month more money. Nominal quotations are $26.50 @ $26.75 asked for February at seaboard or equivalent points, and $26 @ $26.25 for Susquehanna Valley.

Steel Rails.—Business has not come out as freely as was expected, but there is enough doing to keep things moving as during the past three or four months. Mills are not getting much, if any, work ahead, but it is thought there is plenty in sight, and that within 30 or 60 days the mills will have all they can do to meet the current demand. Meanwhile sales are chiefly in lots of a few hundred to 2000 or 3000 tons, and in all cases firm at $30, f.o.b. cars at mills.

Bar Iron.—Mills are competing sharply for business, but prices appear to be fairly steady at 1.60¢ @ 1.65¢ at interior points, or 1.70¢ @ 1.75¢ for city deliveries. The amount of work offered is very disappointing, and at present there is nothing that promises anything better than what has been met with for several months past.

Skelp Iron.—Sales are trifling in amount, while the prices realized are the lowest in the entire history of the trade.

Plates.—The same monotonous report must be given here as under the preceding headings. The demand is very much smaller than was expected, and to make matters worse there is absolutely nothing that promises relief in the near future. Almost the only demand there is comes from boiler and tank builders, and even these are doing less than they were during the later months of the old year. Prices are unchanged, however, and in most cases are quoted about as follows:

	Iron.	Steel.
Tank Plates	1.85 @ 1.90¢	1.85 @ 1.95¢
Refined	2.20 @ 2.30¢	2.00 @ 2.10¢
Shell	2.30 @ 2.40¢	2.20 @ 2.30¢
Flange	3.20 @ 3.30¢	2.40 @ 2.50¢
Fire-Box	4.00 @ 4.25¢	2.60 @ 2.80¢

Structural Material.—The disruption in the Beam trade has not helped the demand, neither does it appear to have had any adverse influence, except to cause an unsettled feeling in regard to prices. If Beams are not wanted, 2.4¢ or 2.5¢ is no more of an inducement than 3.4¢, or any other figure, especially if there is a chance that prices will find a still lower level before matters are definitely arranged. This appears to be the position to-day, and while bids are asked for at 2 25¢ and less, there is practically no business of any account. Nominal quotations are about as follows: Angles, 1.90¢ @ 2¢; Universal Plates, 1.90¢ @ 2¢; Sheared Plates, 1.85¢ @ 1.90¢, and in some cases lower prices, to about $\frac{1}{10}$¢ more, for Steel, according to requirements. Tees, 2.4¢ @ 2.5¢; Beams and Channels, 2.4¢ @ 2.5¢ for either Iron or Steel.

Sheet Iron.—Business is of much the same character as reported for some weeks past. There is a fair demand, considering the general situation, and for the best makes prices are steady, but on other descriptions there is a good deal of irregularity, and under pressure to realize there is more or less weakness. For best makes in small lots prices are quoted as follows:

Best Refined, Nos. 14 to 20	3.00¢ @ 3.05¢
Best Refined, Nos. 21 to 24	@ 3.10¢
Best Refined, Nos. 25 to 26	3.20¢ @ 3.25¢
Best Refined, No. 27	3.40¢ @ ....
Best Refined, No. 28	3.50¢ @ ....

Common, ¼¢ less than the above.

Quotations given as follows are for the best Open-Hearth Steel, ordinary Bessemer being about ½¢ lower than are here named:

Best Soft Steel, Nos. 14 to 20	3¢ @ 3⅛¢
Best Soft Steel, Nos. 21 to 24	3¼¢ @ ....
Best Soft Steel, Nos. 25 to 26	3¾¢ @ ....
Best Soft Steel, Nos. 27 to 28	4¢ @ ....

Best Bloom Sheets, ¼¢ extra over the above prices.

Best Bloom, Galvanized, discount	....
Common, discount	@ 70

Old Material.—Demand very slow, and while asking prices are about as quoted herewith, it is difficult to make sales unless for such lots as buyers happen to want. Iron Rails, $20.50 @ $21 asked; Steel Rails, $16.50 @ $17.50, delivered; No. 1 Railroad Scrap, $19.50 @ $20, Philadelphia, or for deliveries at mills in the interior $20 @ $21, according to distance and quality; $14.50 @ $15 for No. 2 Light; $14 @ $14.50 for best Machinery Scrap; $13 @ $14 for ordinary; $14.50 @ $15.50 for Wrought Turnings; $10 @ $10.50 for Cast Borings, and nominally $23 @ $25 for Old Fish Plates, and $16 @ $16.50, delivered, for Old Car Wheels.

Wrought-Iron Pipe.—A meeting of manufacturers is to be held on Thursday of this week, when it is hoped that some action will be taken to prevent the demoralization now prevailing. Prices are almost what buyers are inclined to pay, although discounts are nominally as follows:

Butt-Welded Black	57½ %
Butt-Welded Galvanized	47½ %
Lap-Welded Black	67½ %
Lap-Welded Galvanized	55 %
Boiler Tubes, 2½ inch and under	52½ %
Boiler Tubes, 3 to 6 inch	60 %
Boiler Tubes, 7 inch and larger	55 %

Chicago.

(*By Telegraph.*)

Office of *The Iron Age*, 59 Dearborn street, CHICAGO, February 10, 1892.

Disquieting reports are current here from other markets. Steel Billets are said to have declined considerably at Pittsburgh. If this is true a very important prop to the maintenence of their values has given way. There has been no important change here during the week. Beams have settled somewhat, but in other lines values have been quite steady.

Pig Iron —All sellers of Coke Irons report a good volume of business in progress, although last week the appearances were in favor of a quiet period. Consumers continue to come forward rather unexpectedly, and evidently find the dealers in a very accommodating mood. Orders are still being booked to cover deliveries through the entire year at prices at least 25¢ below our quotations for same brands of local Coke. The sales of Southern Coke are confined mainly to soft grades, on which prices are fairly firm. The use of Southern Iron as a filler has almost been discontinued here, in consequence of the low price of Northern Irons, but last week one sale of 500 tons of No. 3 Foundry was made, evidently for this purpose. The consumption of Iron here is very heavy, probably greater than at any previous time, but the supply is also in excess of anything before known, and dealers are now sanguine of an early improvement. The demand for Lake Superior Charcoal covers small lots only, but sellers are firm, and there is a disposition among them to mark prices up a notch. Quotations are as follows:

Lake Superior Charcoal	$17.00 @ $17.50
Local Coke Foundry, No. 1	15.00 @ 16.00
Local Coke Foundry, No. 2	14.50 @ 15.00
Local Coke Foundry, No. 3	14.00 @ 14.50
Local Scotch	16.00 @ 16.50
Ohio Strong Softeners	17.75 @ 18.25
Southern Coke, No. 1	15.75 @ 16.00
Southern Coke, No. 2	14.75 @ 15.00
Southern Coke, No. 3	14.00 @ 14.25
Southern, No. 1, Soft	14.75 @ 15.00
Southern, No. 2, Soft	14.00 @ 14.25
Southern Gray Forge	13.75 @ 14.00
Southern Mottled	13.25 @ 13.50
Tennessee Charcoal, No 1	17.50 @ 18.00
Alabama Car Wheel	19.50 @ 20.50
Coke Bessemer	16.50 @ 17.00
Hocking Valley, No. 1	17.25 @ 18.50
Jackson County Silvery	17.50 @ 18.00

Spiegeleisen—Quoted at $28 for 20 %.

Bar Iron.—Inquiries are light at present and there are rumors of weakness among makers. If there is any weakness, however, it is confined to sales for immediate delivery, as the mills are pretty well filled with orders for the monthly requirements of large consumers. Such cutting as is now done is believed to be on small sizes taking heavy extras. Straight Bar specifications are quotable at 1.67½¢ @ 1.70¢, half extras, Chicago. Jobbers report considerable cutting in sales from stock.

Structural Shapes.—Although this is not the season for large Beam contracts the break in the combinetion has brought forth a heavy inquiry from builders and contractors, who are a little apprehensive that the differences among the manufacturers may be suddenly settled, as has previously been the case. Thousands of tons are thus in sight. Prices are irregular. Beams from stock are held at 2.70¢. Moderate lots are selling at 2.50¢. Round lots have been done at 2.40¢, Chicago. On 20-inch Beams 2.50¢, Pittsburgh, is quoted. Angles are selling at 1.95¢ @ 2.10¢, according to specification. Tees, 2½¢ @ 2½¢. Bridge Plates, 2.05¢ @ 2.10¢, all for shipment from mill.

Plates.—Store trade is moderately good at last week's quotations. Mill business has been better, especially in Tank and Light Plates. Steel Tank from mill has sold at 2¢ and Steel Sheets No. 10 to No. 14 at 2 20¢, Chicago.

Black Sheets.—The market has dropped a trifle under efforts to sell by manufacturers in need of business. The quotation of 2.90¢, Chicago, on No. 27 Common now seems to be above the level on which business can be done. Yet No. 27 Common Steel Sheets have brought 3.10¢ from careful buyers. Jobbers quote No. 27 Iron 3.10¢ from stock.

Galvanized Iron.—Manufacturers report continued activity, but with no stiffening effect on prices. Jobbers are finding some irregularity in their trade, and while they quote 60 % and 10 % regular on Juniata, they are obliged to make 67½ % on good-sized orders and 2½ % better on 25 bundle lots.

Track Supplies.—Steel Rails have been reasonably active the past week, but the largest orders have run from 2000 to 5000 tons. The tonnage in sight has latterly been accumulating and the prospects are very favorable for the entrance of numerous heavy orders at an early day. Quotations now range from $31.50 upward, according to character of order. Contracts for Splice Bars have not been so plentiful of late, but the mills are well supplied and getting rather independent. The market seems to have firmed up to about 1.85¢ for either Iron or Steel. Spikes are selling at 2.15¢ @ 2.25¢, according to quantity, and Hexagon Nut Track Bolts 2.65¢ @ 2.70¢. The Union Works of the Illinois Steel Company are to be started up March 1.

Old Rails and Wheels.—Old Iron Rails are very quiet, not a transaction having coming to light since last report. They are quoted nominally $21.75 @ $22; short pieces of Old Steel Rails are in some demand at $15, but long lengths are neglected. Old Car Wheels are passing directly from railroads to consumers, the outside market being dull and inclined to weakness. Dealers report $16 a good price for large lots, with $16.50 named for carloads.

Scrap.—A good demand is reported for Cast, which seems to be scarce; in fact, some of the Pig-Iron houses have had inquiries for very cheap Pig Iron to make up the deficiency in the Scrap supply. Steel Scrap is in better demand from Pittsburgh also, but in other lines the trade in Old Material is quiet. Quotations are as follows, per net ton: No. 1 Railroad, $18.50; No. 1 Forge, $17.50; Horse Shoes, $18; Car Axles, $22; Fish Plates, $20; No. 1 Mill, $12.50; Pipes, $11.50; Sheet Iron, $8; Cast Borings, $7.25 @ $7.50; Wrought Turnings, $10; Axle Turnings, $12; Machinery Cast, $12; Malleable Cast, $9; Stove Plate, $9; Mixed Steel, per gross ton, $11.75; Coil Steel, $15.50; Leaf Steel, $17.75.

Metals. — Considerable quantities of Copper have changed hands here, but the price has been unaffected. Carload lots of Lake are still 10¾¢ and casting brands 10¼¢. Spelter is steady at 4½¢. Sales of Pig Lead amount to some 350 tons Desilverized and 90 tons Missouri at 3.95¢, with no material change expected in the near future.

Louisville.

LOUISVILLE, KY., February 8, 1892.

There has been no improvement in Iron during the past week, $9.50 for Gray Forge being the market price, though a few transactions have been made at a shade less, one of 6000 tons at $9.40, furnace, having been made. Stocks of all grades except No. 3 Foundry are but moderate, save one company that declined to sell after Gray Forge went below $10.00; they have some 10,000 tons on hand. Prices cannot go lower and it is felt that the heavy consumption of the past will be increased, so that business during the year will be very large, but at the low prices prevailing, especially for the first six months. Production will be slightly increased by the going in blast of two furnaces. Outside of these it is felt that not until the price materially increases will other new furnaces decide to go in blast. Sales are being freely made for six months, and at a slight advance some furnaces would take orders for delivery the latter part of the year. We quote for cash, f.o.b. cars, Louisville:

Southern Coke, No. 1 Foundry	$14.00 @ $14.50
Southern Coke, No. 2 Foundry	13.00 @ 13.50
Southern Coke, No. 3 Foundry	12.50 @ 13.75
Southern Coke, Gray Forge	12.00 @ 12.25
Southern Charcoal, No. 1 Foundry	15.75 @ 16.75
Southern Car Wheel	18.00 @ 19 00

Cleveland.

CLEVELAND, February 8, 1892

Iron Ore.—Business in the Iron Ore market is not very brisk, although something is being done all the time. There has been a fair demand for the high priced Minnesota Ores during the past week, and a few small lots have been sold at about $6.30 @ $6.40, Cleveland delivery. Gogebic Ores—especially those for the old established mines—are also asked for, and scattering sales have recently occurred at about $4.85, lower lake delivery. The furnacemen in the Mahoning and Shenango valleys do not seem to have bought a very large proportion of the Ore that will certainly be taken by them this season. Some of them have bought, and bought liberally, too, but many of them are waiting for the Pig-Iron market to assume a little more life and firmness. Buyers of Mill Iron have made very little demonstration as yet. It is settled that Non-Bessemers are to command the same advances over the prices for 1891 as are paid for Bessemers—35¢ @ 40¢—but the market for the mill Ores has not formally opened. There have been a few sales since our last report at about $3.90, Cleveland delivery, but the amounts involved were generally unimportant. A few additional charters on the basis of $1.25 ₱ ton Ashland, to Lake Erie ports, have been made. Last season's Ore is still going forward to the furnaces at a rapid rate. The shipments from Cleveland last week aggregated 32,000 tons, against 18,000 tons for the corresponding week in 1891. The shipments from Ashbabula and Fairport have correspondingly increased.

Pig Iron.—Very little is being done in the way of sales. Stocks are piling up at the furnace in a rapid way. Prices have certainly not improved in any manner, and furnacemen are not trying to force sales at present quotations. Bessemer Irons seem especially weak, and the scattering transactions reported mean very little to the manufacturers. Forge and Foundry Irons appear a bit firmer, but there has been no improvement in prices.

Nails.—Steel Wire Nails at $1.80, in stock, are quite firm. Cut Nails are still quoted at $1.60.

Old Rails.—Some improvement in the demand for Old Americans is reported, but $22.50 @ $23 will still cover the range of quotations, with the former a more probable selling price.

Scrap.—Occasional sales are reported at $13 @ $13.50 for Cast Scrap and $19 @ $19.25 for No. 1 Railroad Wrought.

Pittsburgh.

Office of *The Iron Age*, Hamilton Building, PITTSBURGH, February 9, 1892.

The past week has been a quiet one, with no indications of an early improvement either in demand or prices. Some few lines show up a little better than others, but as a whole the Iron business both as regards raw and finished material is far from satisfactory.

Pig Iron.—Extreme quietness continues to prevail and the volume of transactions is steadily growing smaller. Different reasons have been put forward as to why the Pig Iron market is in such an unsatisfactory condition as it is at present. Furnace operators say that they are pretty well sold up, and until contracts now on their books have been cleared up they do not look for an improvement in the demand. On the other hand, buyers say that they do not want to place orders for future delivery just now, as in the present weak condition of the market prices may go lower. The price of Pig Iron in Pittsburgh to-day is as low as it has ever been, and it is certainly hugging the cost of production very closely. In spite of this, prices are without question weaker to-day than they have been at any time since the reaction set in. We report quotations as follows:

Neutral Gray Forge	$13.25 @	$13.50, cash.
White and Mottled	12.50 @	13.00, "
All-Ore Mill	13.75 @	14.25, "
No. 1 Foundry	15.25 @	15.75, "
No. 2 Foundry	14.25 @	14.50, "
No. 3 Foundry	14.00 @	14.25, "
No. 1 Charcoal Foundry	21.00 @	21.50, "
No. 2 Charcoal Foundry	20.00 @	20.50, "
Cold-Blast Charcoal	25.00 @	27.00, "
Bessemer Iron	15.50 @	15.75, "

Probably the weakest spot in the Pig Iron market is Bessemer, and while we do not reduce our quotations of last week, it is pretty evident that some shading is being done to secure business, and that Bessemer Pig can be bought at inside quotations without difficulty, and for March delivery at that.

Muck Bar.—Demand continues light, with prices ruling as low as were ever obtained in this market. We repeat quotations of last week, $25.50 @ $25.75, with a few sales going, made principally at first-named figures.

Ferromanganese.—Prices remain unchanged at $63 @ $64 for domestic.

Wire Rods.—The market is quiet and we quote at $33.50 @ $34 for domestic. One local concern here that has been buying Wire Rods pretty freely for some time will soon be in a position to make all they require.

Barb Wire.—The retirement of the Columbia Patent Company from the field has had the effect of causing prices to decline very rapidly, as each manufacturer names his own price. We quote nominally: Painted, $2.30, and Galvanized, $2.80. These prices would no doubt be shaded for desirable orders.

Structural Shapes.—The dissolution of the Beam Association and the great drop in the prices of Beams and Channels have not caused orders to come forward as freely as was expected. Other shapes are weaker as a consequence, and it is impossible to state just how low the market will go. We repeat our quotation of last week for Beams at 2.50¢ at mill.

Steel Plates.—A fairly good demand is reported, but prices are unchanged. We quote: Fire Box, 3¼¢ @ 4¼¢; Tank, 2¢ @ 2.05¢; Shell, 2.10¢ @ 2.15¢; Flange, 2.35¢ @ 2.40¢.

Manufactured Iron.—The demand for Refined Bar Iron continues fairly active, and prices may be quoted as follows: For No. 1 city-made Bar we quote at 1.70¢ @ 1.72½¢, 60 days, 2 % off for cash. Bars made from Old Rails we quote at 1.60¢ @ 1.65¢. Tank and Plate Iron continues to be quoted on basis of 2.60¢ for No. 24. In regard to Skelp Iron we have advices that a slightly better feeling is prevalent, and a slight advance over the extremely low prices that have been ruling for some time is expected in the near future. While it is said that Grooved Skelp has been sold here as low as 1.60¢ and Sheared as low as 1.80¢, manufacturers advise us that they will not book orders to-day at less than 1.65¢ for Grooved and 1.85¢ for Sheared. The feeling is pretty general that Skelp Iron reached a much lower figure than there was any call for, and that those who wish to take advantage of present low prices had better place their orders at once.

Nails.—The increased demand for Cut Nails noted for several weeks past continues, but as yet has had no perceptible effect on prices, which we continue to quote at $1.55 @ $1.60 for 30¢ to 35¢ averages, f.o.b. at factory, 60 days, or 2 % off for cash. One feature in connection with the Cut-Nail business may be noted and that is, that no new Nail mills are being built, and that as time goes around the business is being concentrated into fewer hands. The withdrawal of the Riverside concern from the market some time since leaves but about three concerns in the Wheeling district making Nails. The Nail factory of the Bellaire Nail Works, just across the river, has been idle for many months, and may possibly never make Nails again. We understand the concern is considering the advisability of building an extension to their works, and the ground now occupied by the Nail factory may be utilized for that purpose. In the Wire Nail trade prices are being held firmly at $1.70, 60 days, 2 % off for cash, and we understand manufacturers are not anxious to fill for future delivery at that price. The Wire Nail trade may be said to be in better condition just now than at any time for three or four months past.

Steel Billets.—Conflicting rumors are going around in regard to whether the price of Billets, put at $25 by the manufacturers, is being maintained. It is a well-known fact that few sales are being made, and that the trade generally are not anxious to place their orders at that figure. From certain quarters we have reliable information that this price has been shaded, and that a desirable order could be placed without much trouble at a liberal concession.

Wrought-Iron Pipe.—We can report a slightly better demand in this branch of the Iron business. The feeling has become pretty general that present prices are not likely to go any lower, and, as a result, the trade is buying more freely. One large concern states that they are obtaining slightly better prices, as a result of the increase of orders. With the opening of spring and an improvement in the country roads, the manufacturers state that they confidently expect an improvement in their business. Prices established by the association remain unchanged, as follows: Discounts on Butt Black Pipe, 57½ %; Galvanized, 47½ %; on Lap Black, 67½ %, Galvanized, 55 %; on Boiler Tubes, up to 2¼-inch, inclusive, 55 %; 3 inches and larger, 65 %; Casing, all sizes, 55 %; Inserted Joint Casing, 50 %. The sales now being made are based on prices from 5 to 7½ % lower than the above discounts.

Old Rails.—The market continues very dull, with prices ruling for Iron Rails at $22 @ $23, and Steel Rails, $16.75 @ $17.50 for short and long pieces. An improved demand for the latter is looked for by the manufacturers as soon as the better weather sets in which usually comes with spring.

Railway Track Supplies.—Prices are being pretty firmly maintained and orders are coming in pretty freely. We quote as follows: Springs, 2.15¢ @ 2.20¢, 30 days, f.o.b. at mill; Splice Bars, of Iron and Steel, 1.70¢ @ 1.80¢; Track Bolts, 2.65¢ with Square and 2.75¢ for Hexagon Nuts.

Steel Rails.—Standard sections remain unchanged in price at $30, f.o.b. at mill. A report was circulated here last week that the Braddock mill had booked an order for 15,000 tons for a Western road, but we have been unable to verify it.

Old Material.—Prices for Old Material are slightly weaker and the demand is falling off. We have reduced our quotations slightly and quote as follows: No. 1 Railroad Wrought Scrap, $18.25 @ $19.50, net ton; Cast Scrap, $13, gross ton; Rail and Bloom Ends, Steel, $17.25 @ $17.75, gross ton; Steel Coil Spring, $18.50 @ $19, gross ton; Cast Borings, $15.

The old-established firm of Fleming & Hamilton, 61 to 64 Third avenue, Pittsburgh, Pa., manufacturers of stamped and japanned ware and Hamilton's Best Redipped Roofing Plates, have dissolved partnership, the dissolution taking effect January 1, 1892, John Fleming retiring. The business will be continued by the surviving partner, John Hamilton, at the old location, who has the sole right to collect all bills due the late firm and satisfy all its obligations.

L. E. Block & Co., Iron and Steel brokers, formerly located in the Hamilton Building, Pittsburgh, and Dreifus Brothers, in the same line of business, located in the Lewis Block, in that city, have formed a copartnership under the firm name of Dreifus, Block & Co., for the purpose of continuing the Iron and Steel Scrap business, with headquarters at rooms 715-716 Lewis Block, Pittsburgh, Pa. Dreifus, Block & Co. will assume all contracts and liabilities of either Dreifus Brothers or L. E. Block & Co., and will collect all accounts owing to either firm. The new concern will make a specialty of handling Old Steel Rails.

The partnership heretofore existing between Frank R. Dravo and Wm. H. Black, under the firm name of Dravo & Black, Iron and Steel factors, Lewis Block, Pittsburgh, Pa., has expired. Frank R. Dravo will continue to represent the Ball Engine Company of Erie, Pa., and Wm. H. Black the Spiral Weld Tube Company of New York, both being located at the same address as heretofore, Lewis Block, Pittsburgh, Pa.

New York.

Office of *The Iron Age*, 96-102 Reade street, NEW YORK, February 10, 1892.

American Pig.—Agents complain of a very dull business, and report that founders in the districts tributary to this market are not taking the Iron they contracted for, thus showing that consumption is less than expected by those who melt the Iron. Our blast furnace report, which we publish elsewhere, shows that production is keeping up its tremendous pace. We quote Northern brands, $16.75 @ $17.50 for No. 1; $15.75 @ $16 for No. 2, and $14 @ $14.50 for Gray Forge. Southern Iron sells at $15.75 @ $17 for No. 1; $15.25 @ $16 for No. 2 and $13.75 @ $14.25 for Gray Forge.

Spiegeleisen and Ferromanganese.—The market is dull. We quote nominally for 10 to 12 %, $23 @ $23.50; 20 %, $26.75 @ $27, and Ferromanganese, $62.50 @ $63.50.

Billets and Rods.—Reports from the West are unfavorable, both in Rods and in Billets, and offerings of foreign indicate lower prices. Western Rods have been offered at $34.90, Philadelphia, and Billets have relapsed to near the old prices. Foreign 4 x 4 Billets can be purchased at $30.50, and foreign Rods at $42.50 @ $43. We quote domestic Rods, $36 @ $36.50, tidewater.

Steel Rails.—The only transaction of magnitude reported by Eastern mills is the sale of 20,000 tons part Gulf and part Pacific Coast delivery. From the West comes the report that the Louisville and Nashville Railroad has bought 12,000 tons. We continue to quote $30 at Eastern mill. In Light Rails the business is moderate, the season not having opened as yet. So far as is known none of the Girder Rails for the Brooklyn lines have been purchased.

Manufactured Iron and Steel.—The market in Beams continues unsettled. For moderate lots 2.40¢ @ 2.50¢ is the open quotation. It is stated, however, that one large contract, 5000 tons, for season's delivery, has been placed with a leading architectural works in this city at 2¢, Pittsburgh mill. In Boston domestic Beams have been offered at 2.25¢. Some idea of the effect of the old pool on other lines of Structural Material may be obtained from the fact, given by a leading Western mill, that to capture Beam orders Angles were sold as low as ⅛¢ ₱ lb and Tees at 1⅛¢ ₱ lb. In other instances low prices for Columns had to do duty as a means ef evading the agreement on Beams. The orders for Ship Plates which are pending have not yet been given out. We quote: Angles, 1.90¢ @ 2.10¢; Sheared Plates, 1.85¢ @ 2.25¢; Tees, 2.40¢ @ 2.75¢, and Beams 2.40¢ @ 2.80¢; Channels, 2.40¢ @ 2.50¢ on dock. Car Track Channels, 2¢ @ 2.10¢; Steel Plates are 1.9¢ @ 2.1¢ for Tank; 2.15¢ @ 2.30¢ for Shell; 2.40¢ @ 2.65¢ for Flange; 2.60¢ @ 2.75¢ for Marine, and 3¢ @ 3.25¢ for Fire Box, on dock. Bars are 1.7¢ @ 1.9¢, on dock. Scrap Axles are quotable at 2¢ @ 2.20¢, delivered. Steel Axles, 2¢ @ 2.2¢, and Links and Pins, 2.1¢ @ 2.20¢; Steel Hoops, 1.95¢ @ 2.05¢, delivered.

Merchant Steel.—Very low offerings by Western mills are demoralizing this market. Sharp cuts have been made in Spring Steel. We quote, nominally: Hot-Rolled Shafting 1.90¢ @ 2¢; Machinery, 1.90¢ @ 2.10¢; Tire, 2.10¢ @ 2.25¢, and Toe Calk, 2.25¢ @ 2.35¢, delivered.

Track Material.—The Lackawanna Iron and Steel Company have ordered the machinery for making Angle Bars, and will probably be running on them early in April. Competition for work is very keen, and low prices are being made. We quote Spikes, 1.95¢ @ 2.10¢; Angles, 1.65¢ @ 1.75¢, and Bolts, 2.60¢ @ 2.75¢, delivered.

Old Material.—Business is exceedingly dull, buyers not taking any stock. Old Rails are offered at $20 @ $20.50, and No. 1 Wrought Scrap may be quoted $18 @ $18.50.

Henry Hastings of Boston has severed his connection with L. G. Bratt & Co. of Gothenberg, Sweden, whom he has heretofore represented, and now is the agent of the Stora Kopparbergs Bergslags Aktiebolag of Falun, the largest Swedish company, which makes annually 46,000 tons of Pig Iron, 22,000 tons of Bessemer Steel, 15,000 tons of Open-Hearth Steel and 7500 tons of Charcoal Lancashire Iron.

Metal Market.

Copper.—Consumers' purchases of Lake Superior Ingot have been on a somewhat more extensive scale the past week, but individual contracts do not appear to have involved considerable quantities of the metal in any instance, and evidence is still wanting of tendency to depart from the conservative course that has been pursued and which has afforded general satisfaction to consumers since the beginning of the year. Probably 350,000 lb of Ingot for delivery this month and next have been taken at 10¼¢. Intermediately small lots for prompt delivery went at 10.65¢ @ 10.70¢, but while there is a possibility that additional parcels may be picked up at the same figures, the indications at present are that no demand of any magnitude would be met at less than 10¼¢, since the leading producers and the majority of the smaller ones are more or less reserved in their offering, despite rather unfavorable reports received from the foreign markets. On casting brands there has been no change here, but the low prices at which Matte is selling in Europe have a certain amount of bearing, indicating as they do that home smelters will ere long have an ample supply of furnace material, now that old European contracts are practically fulfilled. At the present time 10⅛¢ @ 10¼¢ is quoted for carload lots, but those figures, there is reason to believe, would be shaded on contracts calling for larger quantities for delivery some time ahead.

Pig Tin.—Early in the week 100 tons or more of Straits Tin were turned in settlement of old contracts at 19.60¢ for prompt and current month delivery, but since then the speculative dealings have been extremely few and far between in the absence of either local conditions or European advices that would encourage ventures. The trade distribution, however, is represented as having been of very good volume, but the results in this connection are traced chiefly to the attraction of low prices, which, in not a few instances, ruled below cost of importation where round lots on cash terms were involved, so that the movement would appear to have been a great deal more to buyers than to sellers' advantage. On round lots 19.60¢, cash, has been a common price to the out of town trade, and 19.55¢ is understood to have been accepted, while small quantities were dealt out at 19¾¢ @ 19⅞¢, usual terms. At the prices above quoted Tin is still relatively cheaper here than in the English market.

Pig Lead.—Since our last review the better part of 1000 tons has changed hands. Of this quantity about 500 tons went at about 4.10¢ @ 4¼¢, and at least 200 tons can be traced out as having subsequently been sold at 4.05¢. A further decline in values is thus established, but the advantage gained by consumers seems to have created a thirst for more in the same line, instead of stimulating a greater liberality in purchases, and the market at this writing presents a flat appearance, against which the difficulties at some Western mines count for naught as a factor. To all accounts the consumption by corroders is quite as full at the present time as it was a year ago, and the quantity of metal used elsewhere seems also to be up to the average, but lack of competitive buying and absence of speculative interest leave consumers at a disadvantage for the time being.

Spelter.—Galvanizers are buying in an extremely conservative manner. Brass manufacturers' purchases are on a limited scale also, and elsewhere there is scarcely anything doing. Meanwhile production is going ahead at the rate of last year's unprecedented output, which amounted to 80,000 tons, and surplus supplies are accumulating. As a popular quotation 4.65¢ is named for prime Western in carload lots, but offers at 4.60¢ have been treated with indifference, and 4.55¢ represents about the best bid at present.

Antimony.—The market remains slow, with prices barely steady at 11¼¢ @ 11½¢ for Hallett's, 12¾¢ @ 13¢ for LX, and 15¢ for Cookson's.

Tin Plate.—The movement in Tin Plate has been spasmodic, and, all told, reaches merely fair proportions. In prices there have been only slight changes. Assortments available for filling orders calling for prompt delivery are not as full as could be desired, but business that comes to hand is ultimately taken care of satisfactorily, and future delivery contracts are marked with little difficulty at old rates. We quote as follows for full weights: Coke Tins—Penlan grade, IC, 14 x 20, $5.25; J. B. grade, do., $5.35; Bessemer do., $5.30; Siemens Steel, $5.40. Stamping Plates—Bessemer Steel, Coke finish, IC basis, $5.65 @ $5.70; Siemens Steel, IC basis, $5.75 @ $5.80; IX basis, $6.85. IC Charcoals — Melyn grade, $6.50; for each additional X add $1.50; Allaway grade, $5.75; Grange grade, $5.90; for each additional X add $1.20. Charcoal Ternes — Worcester, 14 x 20, $5.75; do., 20 x 28, $11.45; M. F., 14 x 20, $7.40; do., 20 x 28, $15; Dean, 14 x 20, $5.55; do., 20 x 28, $10.60; D. R. D. grade, 14 x 20, $5.25; do., 20 x 28, $10.20; Mansel, 14 x 20, $5.40; do., 20 x 28, $10.50; Alyn, 14 x 20, $5.45; do., 20 x 28, $10.50; Dyffryn, 14 x 20, scarce; do., 20 x 28, $10.95. Wasters—S. T. P. grade, 14 x 20, $5.10; do., 20 x 28, $10; Abercarne grade, 14 x 20, scarce; do., 20 x 28, $9.75.

C. Kirchhoff, special agent of the United States Geological Survey, has issued a preliminary report on the production of Spelter, which shows the following:

Production of Spelter in the United States, by States (Short Tons).

	1889.	1890.	1891
Total	58,860	63,683	80,337
Eastern and Southern States	10,265	9,114	12,026
Illinois	23,860	26,243	28,711
Kansas	13,658	15,199	22,747
Missouri	11,077	13,127	16,253

Nearly every important producer in the country increased its output. During the year the Bertha Zinc Company have increased their capacity to 300 tons a month, the Weir company are adding two furnaces at Weir, Kan.; the Pittsburgh and St. Louis Company are increasing their capacity from two to five double blocks, and a new plant has been started at Wenona, Ill.

Stocks of spelter on the 1st inst. were as follows:

Stock of Spelter.

	January 1, 1891.	January 1, 1892.
Total	1,134	2,715
Eastern and Southern States.	788	2,380
Illinois	68	
Kansas	233	294
Missouri	45	61

The increase in the stocks on hand has therefore taken place solely in the Eastern and Southern States.

Coal Market.

The Anthracite Coal trade remains in the same stagnant and lifeless condition noted since the Lehigh and Wilkesbarre cut prices and dumped an enormous lot of Coal on the market, sufficient to supply demands for some time to come. There are no sales whatever at the latest advance of 25¢, there being no inquiry, unless trifling lots for hand-to-hand use be an exception. Respecting the grand deal spoken of in the stock market, an immense consolidation under a single agency, &c., subordinates in the market have no direct information. Individual operators, even those on the largest scale, profess to disbelieve in the practicability of any such scheme. Certainly nothing definite has yet been accomplished. The late Mr. McGowen strongly advocated a plan of consolidation, to concentrate agencies, reduce expenses and promote harmony, but the theory proved impracticable, and impediments may prove equally great at the present time. It is not denied, however, that capable and influential men are taking a hand in negotiations, with results yet to be known. About prices, none can be given, as Coal afloat can be had at a bargain, quality said to be inferior. Pea may be quoted at $2 25 @ $2.50, f.o.b.; Buckwheat, $1.75 @ $2, f.o.b.

At the meeting of agents the Lehigh Valley and the Pennsylvania made a demand for a reduction in railroad tolls on Anthracite Coal on the ground that the price of Coal at tide did not enable individual operators to mine and ship Coal, but was voted down. Another meeting will take place this week, but no change in prices is expected. Neither can the allotment bean nounced unless it has been already arranged by the presidents. The question of tolls will be considered.

The total amount ot Anthracite Coal sent to market for the week ending January 30 was 533,619 tons, compared with 669,552 tons in the corresponding week last year. The total amount of Anthracite mined was 2,581,212 tons, compared with 3,094,895 tons for the same period in 1891.

Clearfield reports 45,000 tons, Beech Creek 58,000 tons, Huntingdon and Broad Top 27,000 tons.

The Pottsville *Miners' Journal* says: "No extra effort is needed at this time to keep the Coal companies within the limits of their allotment. The winter weather, in consequence of the necessity of washing the Coal, curtails the production largely. In addition to this, there has been a scarcity of cars in the Schuylkill region. There is, therefore, a short supply going forward."

The Pennsylvania Railroad Company are pushing the work on their new Coal lines in the vicinity of the Allegheny Mountains. By this connection the Pennsylvania Northwestern or Bell's Gap road will communicate with the main line of the Pennsylvania Railroad at Cresson.

The Huntingdon and Broad Top Mountain Railroad's thirty-ninth annual report shows that the quantity of semi-Bituminous Coal mined on the line in 1891 was 523,139 net tons, and the shipment from the Cumberland, Md., region which passed over the road was 1,667,815 net tons. The increase in Coal tonnage in 1891 was 201,334 tons.

St. Louis.

Office of *The Iron Age*, Bank of Commerce Building, ST. LOUIS. February 8, 1892.

Pig Iron.—Another week has elapsed without anything transpiring which can be called interesting. Gray Forge shows a decided tendency toward weakness, and there are rumors that sales have been made as low as $9.30, f o.b. at furnace. At this price there is not much profit for the furnace, especially so when the necessary expenses incident to selling the Iron are taken into consideration, which, added to the first cost, bring the total pretty close to the price above mentioned—*i.e.*, $9.30 ℔ ton. The question naturally arises, what is the explanation of the continued downward tendency of the price of Pig Iron. There are a number of reasons which will partially explain the situation. The one which naturally claims the attention of the careful student of the market is that of production. The number of new plants which have gone into operation during the past five years is simply immense. These plants have been built, some, it is true, with the idea of making Pig Iron for the market, but too many were constructed to invite capital to certain localities. With this latter class the blame of a steadily declining market is to a great extent chargeable. Their Irons are new, and, being anxious to introduce them, they shade prices say 50¢ ℔ ton. The old-established furnaces cannot allow customers of many years standing to be taken from them, and their only plan of defense is to meet the price of the new furnace. Thus commences a general cutting, which eventually ceases when prices reach a level which precludes the possibility of further continuing it. Consumers are smart enough to keep this "guerilla warfare" on the move, and as they are the ones to profit thereby cannot be chided for so doing. The selling agent is another feature of to-day's market who can stand a little light thrown on his methods. His furnace will not allow him to sell at less than a certain price, but he manages to do so by shaving his commission, thus really injuring the furnace, by making the sale, as they suppose he has charged full price, when really by manipulating his commission he manages to shade the furnace price considerably. This, however, comes under the head of "necessary evils," and has to be endured as such. Thus with the features just enumerated the market to-day is hardened, and until some change occurs higher prices are out of the question. During the work under review sales have been confined to moderate quantities for quick delivery, the only sale of any consequence being 2000 tons of No. 2 Foundry and No. 2 Soft to a local manufacturing concern. For ordinary quantities we quote as follows, for cash, f.o.b. St. Louis:

Southern Coke, No. 1 Foundry,	$14.75 @ $15.25
Southern Coke, No. 2 Foundry,	14.25 @ 14.50
Southern Coke, No. 3 Foundry,	13.50 @ 13.75
Gray Forge	12.75 @ 13.25
Southern Charcoal, No. 1 Foundry	16 75 @ 17.25
Southern Charcoal, No. 2 Foundry	16.00 @ 16.50
Missouri Charcoal, No. 1 Foundry	15.25 @ 15.75
Missouri Charcoal, No. 2 Foundry	14.75 @ 15.25
Ohio Softeners	17.75 @ 18.75

Bar Iron.—The increased activity noted in last week's report continues the feature in this department. Car builders are running full time, and having plenty of work in prospect, have been liberal buyers for two weeks past. The local jobbing trade also shows signs of increasing activity, and they report a large inquiry from out of town trade. Prices maintain a firm front. Those quoted herewith represent the market. Car lots at East St. Louis, 1.70¢ @ 1.75¢, half extras; small lots from store, 1.85¢ @ 1.90¢, according to quantity.

Barb Wire.—The market is very demoralized. The collapse of the Columbia Wire Company, so far as the selling of Barb Wire is concerned, has had a bad effect on the market, and prices ruling to-day show a decided drop from those quoted by the Columbia Wire Co. up to February 1. Some mills are endeavoring to hold prices at $2.50 for carload orders, but competition is sharp, and $2.45 and even $2.40 has been quoted for Painted. Galvanized continues at the usual advance of 50¢ ℔ cwt. additional, with the exception of the Continental Wire Company, this city, who quote Galvanized at 45¢ ℔ cwt. additional. The market is in a chaotic condition, and the only hope for prices is that the spring trade will open up early and thus prevent a further decline. It is doubtful, however, if the present prices can be maintained after the spring trade, although it is superfluous to speak of the market so far ahead at this time. We quote as follows: Painted, in car lots, $2.50; Galvanized, $3; Less than car lots 10¢ ℔ cwt. additional. Terms, 60 days, or 2 % discount for cash within ten days from date of invoice.

Wire Nails.—The improvement noted in our last report continues, and prices are well maintained. Sales are reported at $1.90 on cars at East St. Louis, and it is evident that lower than this price will not be accepted. The spring trade will doubtless be very heavy, and, unless something unexpected occurs the present price will no doubt be maintained, and with the increased demand which is looked for with the month of March, higher prices would not be surprising. Jobbers are asking $2.05 @ $2.10, according to quantity.

(*By Telegraph.*)

Metals.—The demand for Pig Lead has fallen flat; in fact, there is no demand; brokers report the dullest market for years. Offerings are limited at 3.85¢, but no better than 3.82½¢ is bid. The future continues discouraging, and prices will doubtless be lower before many days. In Spelter there is some degree of activity. Brass manufacturers are busy with orders, and are beginning to take some interest in the market. Offerings at 4.30¢ are made and some few orders have been placed at this figure. The market is in better shape than it has been for weeks and if the same could be said of Pig Lead, an early advance in Spelter would doubtless be in order, as Spelter is to a certain extent influenced by the price of Pig Lead.

Col. A. M. Shook, president of the Southern Iron Company and general manager of the Tennessee Coal and Iron Company, was in this city last week. We understand while here he was negotiating with St. Louis parties with a view of removing a prominent Steel plant to the South.

Cincinnati.

(*By Telegraph.*)

Office of *The Iron Age*, Fourth and Main Sts., CINCINNATI. February 10, 1892.

Pig Iron.—There have been no large sales of Pig Iron during the week, but a fair number of orders for current consumption, numerous but not very large, either individuallly or in the aggregate. Buyers seem to be more and more convinced that they have nothing to gain by contracting for forward delivery the first half of the year, and while they would buy for the

last half on the basis of present prices, the furnaces refuse to entertain any such propositions. There is a good demand for Standard Southern Charcoal Car Wheel Iron, for the car works and repair shops are very busy, but such Iron is scarce and could readily be sold at full prices; in fact, orders for early delivery have been refused, as the furnaces making it are under contract for all which they can turn out for a long time. As a rule, there is a scarcity of Mottled Coke Iron, but the demand is moderate, and it is offered at $9 at the furnaces for delivery up to July, and this appears to be a fair market price, but there is some offered rather urgently for spot cash which could doubtless be bought at 25¢ ℔ ton less. No. 2 Southern Coke Foundry Iron is selling on the basis of $10.75, at the furnaces. With these exceptions prices are without quotable change, but there is an abundance of Iron for sale which is not promptly taken, giving an appearance of weakness, so that there is some talk of furnaces going out of blast should there not soon be an increased demand One or two furnaces have already blown out, ostensibly because of the unsatisfactory condition of the market. Quotations are as follows:

Foundry.

Southern Coke, No. 1	$14.75 @ $15.00
Southern Coke, No. 2	13.50 @ 13 75
Southern Coke, No. 3	12.75 @ 13.00
Ohio Soft Stone Coal, No. 1	16.25 @ 16 50
Ohio Soft Stone Coal, No. 2	15.50 @ 16.00
Mahoning and Shenango Valley	17.00 @ 17.50
Hanging Rock Charcoal, No. 1	20.00 @ 21.00
Hanging Rock Charcoal, No. 2	19.00 @ 20.00
Tennessee and Alabama Charcoal, No. 1	16.50 @ 17.00
Tennessee and Alabama Charcoal, No. 2	15.50 @ 16.00

Forge.

Gray Forge	12.25 @ 12.50
Mottled Neutral Coke	11.50 @ 12.00

Car Wheel and Malleable Irons.

Standard Southern Car Wheel	19.75 @ 20.00
Lake Superior Car Wheel and Malleable	18.75 @ 19.00

Detroit.

WILLIAM F. JARVIS & Co., of Detroit, Mich., report under date of February 8, 1892. The demand certainly seems to be very slow, and can hardly be termed satisfactory, particularly in view of the fact of the abundant supply both on hand and being manufactured from week to week by furnaces in all directions. There have been some light transactions for quick deliveries for Southern and Northern Foundry Irons, and an occasional order for a round lot of 500 to 1000 tons for longer delivery. The Northern men are making strenuous efforts to regain a portion of their trade in Foundry Iron, which has been neglected and given to the Southern men for a long time past. In this they are fairly successful. There is no apparent change in prices whatever, any concessions being those for delivery rather than base prices being altered. Some inquiries for Lake Superior Charcoal have been received, indicating from the points from which they come an unusual activity, as the buyers are those who are accustomed to place orders during the summer months for the entire winter's supply.

The break in the Beam and Channel Combination has reduced prices to 2.50¢ here with the possibility of their going lower. A good inquiry for Car Truck Channels indicates that additional orders for cars are being continually let. We repeat quotations as follows:

Lake Superior Charcoal, all numbers	$17.00 @ $18.00
Lake Superior Coke, Bessemer	16.50 @ 17.00
Lake Superior Coke Foundry, all ore	17.00 @ 18.00
Ohio Blackband (40 per cent.)	17.50 @ 18.00
Southern No. 2	15.25 @ 15.50
Southern Gray Forge	13.75 @ 14.25
Jackson County (Ohio) Silvery.	18.00 @ 18.50

British Iron and Metal Markets.

[*Special Cable Dispatch to The Iron Age.*]

LONDON, WEDNESDAY, February 10, 1892.

Speculation in Scotch warrants is yet almost at a standstill, and prices have remained stationary at 43/. In Connal's stores there are now 504,000 tons, or 1000 tons less than a week ago. Owing to the slackness of demand Scotch makers have reduced their prices for shipping brands about 2/, but the concession has failed to stimulate business perceptibly. Production continues heavy, and the number of furnaces in blast has been increased to 77. Exports of Pig Iron last month were 40,000 tons, against 31,000 tons in January, 1891. Cleveland warrants are firmer, advancing to 35/10½ under the influence of freer speculative purchases and more buying for consumption. Hematite warrants have improved to 45/7½, but are not dealt in with any freedom.

Tin has been quiet at a decline of about 10/ for the week. At intervals a better demand from consumers was experienced, and that fact, together with favorable position of stocks on the spot, imparted some confidence. Speculation has dragged in a desultory manner, however, and very little interest is manifested by outsiders.

The Copper market has been dull, with a fall of about 17/6 in prices of Merchant Bars. Depression has been emphasized by reports of financial trouble in Paris and adverse Silver fluctuations, the two circumstances causing tired holders to realize, while the uncertainty restrains purchases for "long" account. Consumers are taking supplies very cautiously.

Tin Plate is quieter, with the market easier. For odd sizes and thin gauges there is still a fair inquiry, but absence of American orders for regular sizes is still noticeable. A moderate business has been done in Black Plate at £9 ℔ ton. Exports in January were 29,000 tons, against 39,000 tons during the corresponding month last year. The shipments to the United States were 17,000 tons and 32,000 tons respectively.

Scotch Pig Iron.—Lower prices for nearly all brands have led to a freer movement.

No. 1 Coltness,	f.o.b.	Glasgow	54/
No. 1 Summerlee,	"	"	50/6
No. 1 Gartsherrie,	"	"	50/
No. 1 Langloan,	"	"	52/6
No. 1 Carnbroe,	"	"	46/6
No. 1 Shotts	"	at Leith	53/6
No. 1 Glengarnock,	"	Ardrossan	53/6
No. 1 Dalmellington,	"	"	48/6
No. 1 Eglinton,	"	"	47/6

Steamer freights, Glasgow to New York, 1/; Liverpool to New York, 7/6.

Cleveland Pig.—Livelier business in warrants has invigorated business, and the market for makers' Iron is firmer at 36/ @ 36/3 for No. 3, f.o.b. Middlesborough.

Bessemer Pig.—There is little change in the market, business being moderate, but prices quite steady at 48/ for West Coast brands, Nos. 1, 2 and 3, f.o.b. shipping port.

Spiegeleisen.—No change in the market, demand being moderate. English 20 % quoted at 80/, f.o.b. shipping port.

Steel Rails.—There is still a very good demand and prices are steady. Heavy sections quoted at £4. 2/6 @ £4. 5/, f.o.b. shipping port.

Steel Blooms.—Market remains quiet and prices are without change, makers quoting £4 @ £4. 2/6 for 7 x 7, f.o.b. shipping point.

Steel Billets.—The market remains quiet and prices are without change. Bessemer, 2½x 2½ inches, quoted at £4. 5/, f.o.b. shipping point.

Steel Slabs.—Very little doing and former prices asked. Bessemer quoted at £4. 5/, f.o.b. at shipping point.

Old Iron Rails.—The market remains dull and unchanged. Tees quoted at £2. 17/6 and Double Heads at £3, f.o.b.

Scrap Iron.—Demand moderate but market steady. Heavy Wrought Iron quoted at £2. 10/ @ £2. 12/6, f.o.b.

Crop Ends.—No change in prices and market slow. Bessemer quoted at £2. 12/6 @ £2. 15/, f.o.b.

Tin Plate.—The situation is unchanged and prices stand as they were last week. We quote, f.o.b. Liverpool:

IC Charcoal, Alloway grade	14/ @ 14/6
IC Bessemer Steel, Coke finish	@ 12/6
IC Siemens " " "	@ 12/9
IC Coke, B. V. grade 14 x 20	@ 12/
Charcoal Terne, Dean grade	12/ @ 12/3

Manufactured Iron.—Business is moderate and prices are barely steady. We quote, f.o.b. Liverpool:

	£	s.	d.		£	s.	d.
Staff. Ordinary Marked Bars	8	10	0	@			
" Common "	6	10	0	@			
Staff. Bl'k Sheet, singles	7	10	0	@			
Welsh Bars (f.o.b. Wales)	5	12	6	@			

Pig Tin.—Market weak to-day, with little doing. Straits quoted at £88. 15/, spot, and £89. 10/ for three months.

Copper.—A steadier tone prevails, and demand is better at the close. Merchant Bars quoted at £43. 10/, spot, and £44, three months' futures. Best selected, £48.

Lead.—The market remains quiet and is barely steady at £10. 10/ for Soft Spanish.

Spelter.—A moderate business, and the market still weak at £21. 5/ for ordinary Silesian.

Wallace, Banfield & Co., Limited, proprietors of the Irondale Rolling Mill, at Irondale, Ohio, with branch office at 106 Third avenue, Pittsburgh, Pa., will soon be in the market with tin and terne plates. The plant of this firm consists of two sheet mills, one sheet bar mill, galvanizing department and tinning department, equipped with six tinning stacks. The firm proposes to make tin and terne plates, and will turn out at the start 240 boxes per day. In addition to the manufacture of tin and terne plates, they will also place on the market galvanized black sheet iron, of which they have been large manufacturers for some years, and have been supplying some of the tin-plate establishments who do not roll their own sheets with black sheets for some time. As they do not expect to use their entire output of black sheets for tinning purposes, they will continue to supply their trade with black sheets as heretofore, though not in as large quantities. Their output for the present year of black and galvanized sheet iron will amount to 5000 tons. Their tin-plate department is expected to be ready for operation not later than February 15 next. This plant is one of the best equipped in the country, and they have recently made large additions, which have considerably increased their capacity.

HARDWARE.

Condition of Trade.

THERE IS a perceptible improvement in business, and manufacturers and jobbers unite in reporting a somewhat increased demand. The large trade are disposed to place their orders more freely for goods needed for the season's trade which they have not already purchased, but are evidently careful and cautious, their orders not yet indicating a confidence on their part that prices will soon advance. The trade as a whole are apparently delaying their purchases under the impression that goods can probably be obtained at the present prices a little later, their desire being simply to have the goods in sufficient quantity to meet the requirements of their trade from month to month. Travelers representing the wholesale houses generally report a fair condition of business throughout the country, with an expectation on the part of retailers that trade during the year will be better than the average. Stocks are referred to as fair, but not heavy. In the matter of prices there has been no important change during the past week, the market as a whole continuing on about the level which it has had for some time. The condition of things in Barb Wire circles has, as noted below, developed lower prices, which, of course, have a slight effect on the tone of the market in general. Collections as a whole are fairly good, the South being an exception.

Chicago.

(*By Telegraph.*)

Jobbers of Shelf Hardware report an improvement in the demand this week as compared with last. Orders opened up in a much better shape on Monday and reports from traveling men are very encouraging as to the future. Merchants report this branch of trade in as good condition as could be expected when the state of the weather is taken into consideration. Very cold periods have alternated with spring-like spells, causing the roads to be almost impassable at either time. The situation has been further complicated also by grain blockades at many points, which have prevented free sales of grain by farmers and caused collections to become bad in various localities. Heavy Hardware is quiet, as was to be expected under such circumstances. Some large buyers have been in the city from the far West and have made extensive purchases, showing their faith in the future. Manufacturers' agents, however, say orders are not coming in with their accustomed liveliness at this season, but seem to be limited to the wants of the buyers. Cutting is going on to some extent in order to move certain lines of goods, but perhaps no more than usual when trade is inclined to be quiet. A new list has been brought out on Wire Rope and a uniform discount established, which has the effect of slightly lowering prices on Steel but makes Iron about the same as before.

St Louis.

(*By Telegraph.*)

A heavy trade has been transacted in Hardware during the past week. Orders call for general assortments, indicating that dealers are filling up their stocks in preparation for the spring trade. Prices, while low, are well maintained. The break in Barb Wire has resulted in large sales, and prices have reached a low level.

Wire Nails have shown increased strength, and are firmly held at the recent advance. Cut Nails are neglected at unchanged prices. Fire Arms and Ammunition are in fair demand, and the recent advance in Blasting Powder has not checked the demand in the least. Building Tools are ordered freely. Collections are good.

Notes on Prices.

Cut Nails.—The market continues sluggish, with only a moderate amount of business. The production of Nails is somewhat reduced, owing to the stoppage of one or two large mills and a diminished activity in others. It is, however, ample for the requirements of the trade. Prices are substantially the same as they have been for some weeks, on the basis of $1.45 at mill for either Iron or Steel Nails in quantities. This price is, however, sometimes shaded. New York quotations are $1.55 to $1.60, on dock, while small lots from store sell at $1.65 to $1.75.

Chicago by Telegraph.—Cut Steel Nails are reported rather quiet locally by the manufacturers. The mills are supplied with work up to March 1, but outside concerns are making vigorous efforts to secure trade. Their quotations range from $1.60 to $1.65, Chicago, on 30-cent average. Jobbers quote $1.75 from stock and report a very light demand from their customers.

Wire Nails.—The condition of the market in Wire Nails is more satisfactory than it has been for some time, as the manufacturers are succeeding in holding the slight advance made a week or two ago. The volume of business is also fair, the aggregate of sales being considerable. The quotations are on the basis of $1.70, at mill.

Chicago, by Telegraph.—The Wire-Nail manufacturers appear to be uniformly quoting $1.85, Chicago, on factory lots, but are not entering many orders at the advance. They are having numerous inquiries, however, and look for a lively trade as soon as merchants are convinced that the advance will be maintained. Jobbers quote $1.90 on carloads and $1.95 on small lots, and report a good volume of business in this line.

Barb Wire.—The withdrawal of the Columbia Wire Company from the market and the resumption of the sale of their own products by the different manufacturers has already brought about the reestablishment of agencies and an active canvass of the market for business. This, with the withdrawal of restraints as to price, has naturally resulted in lower quotations, but there has not been so much of a break in prices as many anticipated. They are, however, perceptibly lower, and the market is characterized by some irregularity and uncertainty, with a possibility of a still further settling. In this state of things buyers are naturally conservative in placing orders, but it is understood that a good many purchases have been made with some understanding in regard to guarantee of prices. Quotations are now on the basis of $2.70 to $2.80 for Four-Point Galvanized in carload lots at mill.

Chicago, by Telegraph.—Values in Barb Wire are holding up better than had been expected. Manufacturers' prices for Painted are about $2.45, Chicago. Jobbers quote $2.55 in carload lots, $2.60 in small lots, and 50 cents per 100 pounds more for Galvanized. Business is active.

Tackle Blocks.—For the past few months the Tackle-Block market has been in a very unsatisfactory condition, with a gradual settling in quotations until the recent very low prices have been reached. This condition of things has constrained the manufacturers to consider the question as to some understanding or arrangement by which things would be in better shape, and this matter is now receiving their careful attention.

Common Carriage Bolts.—An adjourned meeting of the Common Carriage Bolt Association is to be held this week, when it is understood that action will be taken with reference to the irregularities which for some time have characterized this line. There has been for some time an increasing tendency toward such irregularities until now there are few large houses that expect to pay regular schedule prices for their goods, which in one way or another they are able to obtain at concessions beyond regular discounts. The matter certainly calls for attention on the part of the manufacturers, and the endeavor to control prices should either be put into effect or abandoned.

Rules.—The Rule market continues in substantially the same condition as for some time, with a tendency of the part of some manufacturers to withdraw prices which were current a few months ago. The market has thus a slightly better tone, but is characterized by some irregularity

Wire Rope.—The associated manufacturers of Wire Rope have adopted a revised list for Hoisting, Transmission and Galvanized Wire Rope, and also for Copper, Iron, Tinned and Galvanized Sash Cords. The revised list, which went into effect February 8, is printed below and is subject to a uniform discount of 45 per cent.:

Hoisting Rope.

19 Wires to the Strand.			Iron.	Crucible Steel.
Trade number.	Diameter in inches.	Weight per foot in pounds of Rope with Hemp Center.	Price per foot in cents.	Price per foot in cents.
1	2¼	8.00	122	152
2	2⅛	6.30	96	120
3	1¾	5.25	84	100
4	1⅝	4.10	68	80
5	1½	3.65	62	71
5½	1⅜	3.00	52	60
6	1¼	2.50	44	50
7	1⅛	2.00	36	41
8	1	1.58	29	34
9	⅞	1.20	23	27
10	¾	0.88	18	21
10¼	⅝	0.60	15	17
10½	9-16	0.44	12½	15
10¾	½	0.35	10	13
10a	7-16	0 29	9½	12½
10⅝	⅜	0.26	9	12

Transmission Rope.

7 Wires to the Strand.			Iron.	Crucible Steel.
Trade number.	Diameter in inches.	Weight per foot in pounds of Rope with Hemp Center.	Price per foot in cents.	Price per foot in cents.
11	1½	3.37	57	70
12	1⅜	2.77	48	60
13	1¼	2.28	41	50
14	1⅛	1.82	33	40
15	1	1.50	27	32
16	⅞	1.12	21	25
17	¾	0.88	16	19
18	11-16	0.70	14	16
19	⅝	0.60	12	14
20	9-16	0.44	9	11
21	½	0.37	7½	9
22	7-16	0.28	6½	7½
23	⅜	0.20	5½	6
24	5-16	0.16	4½	5
25	9-32	0.125	3½	4

Galvanized Wire Rope.

Iron.				Crucible Steel.			
Circumference in inches.	Approximate diam'er in inches.	Weight per 100 feet in pounds.	Seven wires per strand. Price per pound.	Diameter in inches.	Circumference in inches.	W'ght per fathom in pounds.	Price, seven wires per strand. Cts. per pound.
5½	1¾	441	11½	5-16	1	1	5
5¼	1⅝	408	11½	⅜	1¼	1¼	6
5	1⅝	367	11½	7-16	1⅜	1¾	7½
4¾	1½	350	11½	½	1½	2	9
4½	1⅜	317	11½	9-16	1¾	2½	11
4¼	1⅜	275	11½	⅝	2	3½	14
4	1¼	248	11½	11-16	2¼	4½	16
3¾	1¼	212	11½	¾	2½	5½	19
3½	1⅛	183	11¾	⅞	2¾	6¾	25
3¼	1 x	158	12	1	3	8	32
3	1	133	12	1⅛	3½	10½	40
2¾	⅞	108	12	1¼	4	14	50
2½	¾	93	12½				
2¼	¾	75	13				
2	⅝	63	14				
1¾	9-16	42	15¼				
1½	½	34	17				
1¼	⅜	23	18½				
1⅛	⅜	19	19				
1	5-16	16	19½				
⅞	9-32	12	25				
¾	¼	8	31				
⅝	1-5	5	38				
½	1-6	4	48				

Tiller Rope.

Diam. in's.	¾	⅝	½	⅜
Bri't Iron, cts. per ft.	26	20	15	11

Copper, Iron, Tinned and Galvanized Sash Cords.

Trade No.	Diam'er.	Price per foot in cents. Iron.	Tinned and Galvanized.	Copper.
26	¼	3½	4½	10
27	7-32	2¾	3½	8
27½	3-16	2¼	2¾	5½
28	⅛	1½	2	4
29	1-16	1	1½	2½

Stranded Copper Cables and Copper Wire Rope made to order of any size.

Covert Mfg. Company.—Covert Mfg. Company, West Troy, N. Y., issue a new discount sheet under date January, 1892, in which they give revised discounts on their varied line of goods. It represents changes in the price of a number of articles.

Fish Spears.—Union Mfg. and Plating Company, 240 Carroll avenue, Chicago, who are manufacturing in connection with other goods a line of Fish Spears, are offering the latter at the prices given below. The shanks of these Spears are made of malleable iron, the blades being brayed in, giving, we are advised, a better finish and much greater strength than can be attained by welding steel to wrought iron. The company will soon have ready sizes 1 and 2 with socket instead of tanged, as at present. The prices of the Fish Spears are as follows, and are subject to a discount of 50 per cent.:

No.					Per doz.
1.	3	Prongs,	2¼	inch, Tanged	$3.50
2.	5	"	4	" "	4.50
4.	5	"	4½	" Socket	9.00
5.	5	"	5	" "	12.00

Curry Combs.—The affairs of the American Curry Comb Company, Troy, N. Y., are understood to be moving along smoothly with a regular maintenance of prices and a fair, though not heavy, volume of business. We give below a table showing the numbers made by the different manufacturers and also the former numbers of corresponding goods. This table will be found useful to the trade in changing from the old to the new numbers. It will be borne in mind that the present or new numbers are always to be used in ordering. The headings give the names of the different manufacturers and the numbers which they are now making, together with comparative numbers formerly made by other manufacturers:

SWEET & CLARK COMPANY.

Present numbers.	Old numbers.	Comparative numbers. E. S. Hotchkiss. Old numbers.	Southington Cutlery Co. Old numbers.	Wm. P. Kellogg Old numbers.	New York Stamping Co. Old numbers.	New York Stamping Co. Old numbers.	Edwin Hills. Old numbers.
1	15	.....	.....	1	.....	Climax.	.....
2	19	.....	.....	2	.....	.....	.....
2½	20	.....	.....	2½	.....	.....	.....
17	17	.....	.....	10	.....	.....	.....
78	78	.....	170	77½	.....	78	.....
79	79	.....	.....	1379	.....	.....	.....
86	86	.....	120	1495	.....	.....	.....
122	122	122	222	122	.....	.....	.....
124	124	.....	1222	123½	.....	.....	.....
212	212	325	124	124	.....	.....	.....
212½	212½	.....	124½	124½	.....	.....	.....
220	220	323	.....	323	.....	.....	.....
220½	220½	324	.....	324	.....	.....	.....
222	222	222	.....	222	.....	.....	.....
224	224	1222	.....	222½	.....	.....	.....
322	2½	322	322	322	.....	1313½	.....
1300	1300	.....	.....	1390	.....	.....	.....
1302	1400	.....	.....	1385	.....	.....	.....
1350	84	.....	.....	1350	.....	.....	.....

IN SUPPLEMENT.

223	223	.....	.....	40	.....	1212	.....
225	225	.....	.....	40½	.....	1212½	.....

EDWIN HILLS.

Present numbers.	Old numbers.	Comparative numbers. Sweet & Clark Co. Old numbers.	E. S. Hotchkiss. Old numbers.	Southington Cutlery Co. Old numbers.	New York Stamping Co. Old numbers.	New York Stamping Co. Old numbers.	Wm. P. Kellogg. Old numbers.
310	10	.....	.....	.....	.....	Climax.	1201
320	20	.....	.....	137	.....	160	1204
330	30	.....	.....	.....	.....	.....	.....
350	50	45½	.....	180	.....	.....	.....

NEW YORK STAMPING CO.

Present numbers.	Old numbers.	Comparative numbers. Sweet & Clark Co. Old numbers.	E. S. Hotchkiss. Old numbers.	Southington Cutlery Co. Old numbers.	Wm. P. Kellogg. Old numbers.	Edwin Hills. Old numbers.
Climax.		.....	.....	.....	.....	.....
99	99	.....	.....	.....	221	.....
44	44	.....	.....	.....	.....	.....
Eclipse.		.....	.....	.....	.....	.....
115	15	.....	.....	.....	.....	.....
117	17	.....	.....	.....	.....	.....
19	19	.....	.....	.....	.....	.....
211	21	.....	.....	.....	.....	.....
23	23	.....	.....	.....	.....	.....
24	24	.....	.....	.....	.....	.....
26	26	.....	.....	.....	.....	.....
28	28	.....	.....	.....	.....	.....
433	433	1390	.....	40	1375	.....
Lawrence		.....	.....	.....	.....	.....
Perfect.		.....	.....	.....	.....	.....
11	1	.....	.....	.....	.....	.....
12	20	.....	.....	.....	.....	.....
13	120	.....	.....	.....	.....	.....
14	220	.....	.....	.....	.....	.....
21	21	.....	.....	.....	.....	.....
121	121	.....	.....	.....	.....	.....
1221	221	.....	.....	.....	.....	.....
30	30	.....	.....	.....	.....	.....
1130	130	.....	.....	.....	.....	.....
1230	230	.....	.....	.....	.....	.....
31	31	.....	.....	.....	.....	.....
131	131	.....	.....	.....	.....	.....
231	231	.....	.....	.....	.....	.....
800	80	430	.....	.....	1860	.....
180	180	431	.....	.....	1861	.....
280	280	433	.....	.....	1862	.....
811	81	435	.....	.....	1866	.....
181	181	437	.....	.....	1867	.....
281	281	439	.....	.....	1868	.....
900	90	441	.....	.....	1863	.....
190	190	443	.....	.....	1864	.....
290	290	445	.....	.....	1865	.....
911	91	447	.....	.....	1869	.....
191	191	449	.....	.....	1870	.....
291	291	451	.....	.....	1871	.....
500	500	.....	.....	.....	.....	.....
504	504	.....	.....	.....	.....	.....

WM. P. KELLOGG.

Present numbers.	Old numbers.	Comparative numbers. Sweet & Clark Co. Old numbers.	E. S. Hotchkiss. Old numbers.	Southington Cutlery Co. Old numbers.	New York Stamping Co. Old numbers.	New York Stamping Co. Old numbers	Edwin Hills. Old numbers.
					Lawrence	Climax	
75	75	70	.....	.....	.....	.....	.....
80	80	40	.....	.....	.....	.....	.....
81	81	40½	.....	.....	.....	.....	.....
83	83	40¾	.....	.....	.....	.....	.....
84	84	42	.....	.....	.....	.....	.....
85	85	42½	.....	.....	.....	.....	.....
87	87	42¾	.....	.....	.....	.....	.....
90	90	41	.....	.....	.....	.....	.....
91	91	41½	.....	.....	.....	.....	.....
93	93	41¾	.....	.....	.....	.....	.....
94	94	43	.....	.....	.....	.....	.....
95	95	43½	.....	.....	.....	.....	.....
97	97	43¾	.....	.....	.....	.....	.....
912	912	130	.....	352	900	12	.....
913	913	130½	.....	354	901	112	.....
914	914	130¾	.....	353	902	212	.....
915	915	134	.....	.....	905	21	.....
916	916	134½	.....	.....	906	121	.....
917	917	134¾	.....	.....	907	221	.....
1340	1340	133	.....	1340	910	213	.....
1345	1345	137	.....	41	912	222	.....
1360	1360	.....	.....	.....	704	.....	.....
1365	1365	.....	.....	.....	.....	.....	.....
1370	1370	.....	.....	.....	706	999	.....
1373	1373	.....	.....	.....	.....	.....	.....
1380	1380	1301	.....	.....	.....	1400	.....
1400	1400	.....	.....	.....	.....	.....	.....
1490	1490	260	.....	.....	.....	.....	.....
1500	1500	.....	.....	.....	.....	.....	.....

IN SUPPLEMENT.

400	860	400	.....	.....	.....	.....	.....
401	861	401	.....	.....	.....	.....	.....
403	862	403	.....	.....	.....	.....	.....
405	866	405	.....	.....	.....	.....	.....
407	867	407	.....	.....	.....	.....	.....
409	868	409	.....	.....	.....	.....	.....
411	863	411	.....	.....	.....	.....	.....
413	864	413	.....	.....	.....	.....	.....
415	865	415	.....	.....	.....	.....	.....
417	869	417	.....	.....	.....	.....	.....
419	870	419	.....	.....	.....	.....	.....
421	871	421	.....	.....	.....	.....	.....
912½	912½	131	.....	.....	.....	12½	.....

E. S. HOTCHKISS.

Present numbers.	Old numbers.	Comparative numbers. Sweet & Clark Co. Old numbers.	Southington Cutlery Co. Old numbers.	Wm. P. Kellogg. Old numbers.	New York Stamping Co. Old numbers.	New York Stamping Co. Old numbers.	Edwin Hills. Old numbers.
177	177	111	.....	177	Law-rence	Cli. 17	.....
810	810	5	.....	900	.....	.....	.....
813	813	8	.....	903	.....	.....	.....
816	816	200	.....	816	816	.....	.....
817	817	201	.....	817	817	.....	.....
818	818	203	.....	818	818	.....	.....
822	822	205	.....	822	822	.....	.....
823	823	207	.....	823	823	.....	.....
824	824	209	.....	824	824	.....	.....
846	846	846	.....	846	.....	.....	.....
847	847	847	.....	847	.....	.....	.....
848	848	848	.....	848	.....	.....	.....
849	849	849	.....	849	.....	.....	.....
856	856	100	.....	33	.....	.....	.....
857	857	102	.....	33½	.....	.....	.....
858	858	106	.....	35	.....	.....	.....
859	859	108	.....	35½	.....	.....	.....
860	860	.....	.....	.....	.....	.....	.....
861	861	.....	.....	.....	.....	.....	.....
862	862	.....	.....	.....	.....	.....	.....
863	863	.....	.....	.....	.....	.....	.....
864	864	.....	.....	.....	.....	.....	.....
865	865	.....	.....	.....	.....	.....	.....
866	866	.....	.....	.....	.....	.....	.....
867	867	.....	.....	.....	.....	.....	.....
868	868	.....	.....	.....	.....	.....	.....
869	869	.....	.....	.....	.....	.....	.....
870	870	.....	.....	.....	.....	.....	.....
871	871	.....	.....	.....	.....	.....	.....
1177	1177	111½	.....	1177	.....	177	.....
1200	1200	.....	.....	.....	.....	.....	.....
1403	1203	.....	.....	.....	.....	.....	.....

IN SUPPLEMENT.

1331	.....	.....	.....	1331	.....	217	.....

SOUTHINGTON CUTLERY CO.

Present numbers.	Old numbers.	Comparative numbers. Sweet & Clark Co. Old numbers.	E. S. Hotch-kiss. Old numbers.	Wm. P. Kellogg. Old numbers.	New York Stamping Co. Old numbers.	New York Stamping Co. Old numbers.	Edwin Hills. Old numbers.
000	000	000	000	000	.....	Cli. 00	.....
000½	000½	000½	10	000½	.....	0.0	.....
10	10	8	.....	550	.....	60	.....
15	15	9	.....	560	.....	160	.....
18	10	10	.....	570	.....	260	.....
60	60	30	.....	50	.....	.....	.....
61	61	30½	.....	51	.....	.....	.....
100	90	.....	.....	.....	.....	.....	.....
300	300	.....	.....	.....	.....	.....	.....
302	302	.....	.....	.....	.....	.....	.....
314	314	202	314	314	.....	202	.....

SHINGLE BACKS.

226	622	226	.....	226	.....	.....	.....
226½	623	226½	.....	226½	.....	.....	.....
228	822	228	.....	228	.....	.....	.....
228½	823	228½	.....	228½	.....	.....	.....
228¾	824	228¾	.....	228¾	.....	.....	.....
230	432	230	.....	230	.....	.....	.....
230½	933	230½	.....	230½	.....	.....	.....
234	432	234	.....	234	.....	.....	.....
234½	433	234½	.....	234½	.....	.....	.....
239	240	239	.....	239	.....	.....	.....
239½	241	239½	.....	239½	.....	.....	.....
245	542	245	.....	245	.....	.....	.....
245½	543	245½	.....	245½	.....	.....	.....

Auger Bits.—There are few new features in the market for Augers and Auger Bits, prices continuing at about the former level, with some irregularity in quotations made by different manufacturers. Job T. Pugh, 3112 Market street, Philadelphia, is now putting on the market a line of Jennings' Pattern Bits, which he quotes at discount 40 per cent.

Glass.—There is very little change in the Glass market since our report of last week. The reports received from the country at large point toward a stronger market, especially on Western Glass. The Eastern market lacks strength. A discount of 80 and 20 % is reported as having been given on desirable orders for American Glass. Quotations made to purchasers of Imported Glass are still irregular, 80 per cent. discount being frequently named. Should the American Glass Manufacturers advance prices at the February meeting, it is thought that such action would probably lead to a corresponding advance in French Glass. The reported number of pots in operation shows an increase of eight since reference was made in our issue of January 28. Nominal quotations remain unchanged, as follows: American Window Glass, in carloads, 80 and 10 and 5 per cent. discount; less than car lots, 80 and 5 per cent. discount; French Window Glass, 75 and 10 per cent. discount; American Plate is held at a discount of 50, 10 and 5 per cent., and imported Plate at a discount of 60 per cent.

Tubular Lanterns.—The market for No. 0 Tubular Lanterns is now an open one, and it is understood that lower prices are likely to be made.

Shippers Massing Their Freight.

A NEW FREIGHT ASSOCIATION, which seems to be organized for an excellent purpose, has been established in Chicago. It is called the Merchants' and Shippers' Association and is formed for the benefit of those whose business is not of a character to secure carload rates.

The association, the officers claim, while expecting to secure the lowest rates possible, means to do it in an open and lawful manner. To accomplish this object they say they will have the choice of four sets of differential rates now in effect from New York to Chicago and seven lines over which these rates apply. These differentials on first-class freight are 5, 8, 10 and 15 cents a hundred pounds less than the rate exacted by the standard lines. It is also claimed to be the purpose of the association to mass consignments at New York for simultaneous shipment to get the benefit of carload rates and offering for shipment such quantities of freight as will warrant the transportation companies in running the same through to Chicago on express time.

It is also stated that the association has many members whose shipments are made almost exclusively by express. These shipments being uncontrolled by law, advantages are to be gained by united action of shippers.

E. J. Hutchison, late of the Merchants' Freight Bureau, has recently been appointed general agent of the new association and has charge of its affairs.

UNDER THE HEADING of Help Wanted in this issue will be observed an advertisement signed "Steno," Box 210, in which an opening for an intelligent stenographer who is familiar with the Hardware business is referred to. The advertisers are a well-known house, and the opportunity would seem to be a good one for the right party.

1892 DINNER

OF THE

Hardware and Metal Trades

THE ARRANGEMENTS for the approaching dinner on the evening of February 23 are progressing very satisfactorily. It is evident that it will be a representative gathering of the merchants and manufacturers in Hardware and kindred lines. Many of the leading houses have already secured their tickets, and the whole number will be subscribed for at an early date. The committee extend to all in the trade a cordial invitation to attend the dinner and suggest their procuring tickets as soon as possible. It is hoped that many manufacturers, though not resident here, will be represented, and also that merchants from other cities will accept the invitation thus given.

The sale of tickets is intrusted to A. D. Clinch, 94 Chambers street, New York, to whom inquiries should be addressed. Careful arrangements are being made by the sub-committee with reference to toasts and speakers. The matter of music is also receiving attention. In short, everything is being done to make the occasion one which will be enjoyable and creditable to the city and the trade here centering.

The account which we give elsewhere of the dinners held in 1858 and 1860 will be of especial interest at this time, recalling vividly the condition of things in the trade more than a generation ago. It will also have the effect of giving a distinct impression of the condition of things prior to the war and the spirit which prevailed here at that time. Many memories of public men and well-known houses who have disappeared from the field will thus be recalled.

The accounts of these former dinners will also be of interest as illustrating the manner in which they were conducted and the cordial spirit with which the trade participated in them.

It will be observed that in the account of the 1860 dinner the utility of the diagram which we reproduced in a recent issue is referred to as avoiding all confusion in connection with the seating of the guests. The committee arranging for the coming dinner have decided to have a similar diagram prepared which will indicate the seat occupied by each individual. It is intended that this diagram shall give both the firm name and the name of the individual representing the firm, and in order that there may be time for the preparation of a suitable diagram they request that these names be reported to Mr. Clinch at the above address by February 15. It is obvious that such a diagram will add a little to the sociability of the occasion, indicating as it will the persons who are to be present.

NEW YORK
Hardware Dinners.
1858 and 1860.

—1858—

THE SECOND ANNUAL DINNER of the Hardware Dealers' Board of Trade of the City of New York was given on the evening of January 4, 1858, at the St. Nicholas Hotel. The number of guests is estimated at 300, who sat down to a sumptuous repast provided in the style for which the proprietors of the St. Nicholas Hotel were noted. The chair was occupied by the president of the Board, Edward Corning, and at his right and left sat the following guests: His Honor Mayor Tiemann, Rev. Dr. Hutton, Rev. Dr. Adams, Peter Cooper, J. DePeyster Ogden, Hon. George Briggs, John Stephenson, General Lloyd, Isaiah Blood, Samuel A. Goddard of Birmingham, England; Mr. Jaffery, J. W. Baker and James J. Day. Grace was said by the Rev. Dr. Hutton. The ornamental emblems are referred to as effective and beautiful. Among them were the following: The emblem of the Hardware Trade, The American Blacksmith and a monument composed of kegs of nails. There was also a figure of Santa Claus in sugar and a statue of St. Nicholas. A great deal of care and skill were evidently expended in arranging for the dinner and in the decoration of the tables.

The songs which were sung, some of them specially composed for this occasion, were a unique and pleasant feature of the dinner. They were printed on a sheet and distributed among the guests, and are reproduced herewith in *fac-simile*. They are of interest also inasmuch as the same songs were sung at the following dinner, given in 1860.

After the dinner was concluded the secretary, John Davenport, read letters from Erastus Corning, Cornelius V. S. Roosevelt and Zadoc Pratt. The chairman then in a few appropriate remarks alluded to the recent movement on the part of the members of the Hardware trade in favor of short credits, congratulating the board on the success of their plans. He deplored the loss of one of their number by death, and the absence of another guest by domestic affliction He said that although it did not seem proper to allude to anything sad or solemn on a festive occasion, he could not help referring to the financial crisis. The ship of commerce, he said, had experienced a September gale and sought safety in a harbor of suspension. [Cheers.] He dwelt at considerable length on the prevailing system of credits, which he deplored as a great evil, and congratulated the merchants in the Hardware trade for the part they had recently taken in reforming the system.

In referring to the honor done them by the presence of their guests he alluded to Mayor Tiemann, on the mention of whose name the whole company burst forth in a round of applause, and to the veteran Birmingham merchant, and said that the link that bound England to America was also present. The chairman then referred to each of the guests by name, and to the members of the press, which he was glad to see largely represented at the banquet, and concluded by thanking the association for re-electing him to the presidency.

Rev. Dr. William Adams then addressed the company, alluding to the fact that ministers of religion were among the individual guests of the society at both of their annual festivities and showing the connection between trade and religion. He then gave a sketch of the progress of the trade from the first small wants of man to the perfection of the present day. The chairman then proceeded to give the regular toasts as follows:

1. *The United States of America.*—Distinct as the billows but one like the sea.

Music—"Star Spangled Banner," sung by the Volunteer Club of the association.

This toast was responded to by Mr. Van Buren, who alluded to the happy union of the members of the Hardware trade, and contrasted it with the old custom of opposition which characterized the trade.

2. *The City of New York.*—She has symbolized Worth by a monument; may it always exemplify her commercial character.

Hon. Mayor Tiemann rose to respond and was received with loud cheers. The following is the substance of his address:

He said that he had not intended to speak this evening, but when New York was toasted he could not hold back, inasmuch as he had been honored by being exalted to the position of Chief Magistrate of the second city of the world—a city which before twice the time within his memory has passed will be the first city of the world. As an evidence of the importance of New York, he said that no stocks, either in railroads or canals, could be sold unless those roads or canals shortened the distance to New York by a few miles. The late crisis showed how great was the influence she exercised all over the world. Even Holland, with her money trade system, had to ask for a general suspension in all her trade, which New York had never done. He spoke of the time within his memory, when the City Hall was just rising above ground, and when he often gave pieces of marble to the children to play with. At that time visitors to New York used to take a hack and drive out of town as far as the bridge across Canal street. He remembered often—for he was a bad boy and frequently played truant from school—hiding under the Canal street bridge while his father drove over it, and then came out. When he was three years old his father lived at the corner of Twenty-third street and Fourth avenue, and by the way his father lived in that locality still. When a friend from the city came to visit him, he would come one day and return the next. [Laughter and cheers.] This was a fact; and when his father was going to visit the city, the whole family were occupied the previous night in making preparations for the journey. They all got up at 4 o'clock in the morning to see his father off, and it was considered a good journey if he got home before midnight. He remembered when, as a boy, he first went to Manhattanville, where he now resided. He was then in the drug business, but is now engaged in a good paint and putty business.

The chairman here arose and called for three cheers for the man who was not ashamed of his business, which was heartily responded to.

Continuing his address Mr. Tiemann said: At that time he paid 75 cents to go from New York to Manhattanville. He merely mentioned these facts to show how the city had progressed. He remembered seeing the water flowing from the East to the North River through Roosevelt Street, and yet he was a young man to be the father of this great city. [Laughter and cheers.] He had heard the calculation made by J. Pintard that in the year 1900 the population of New York would be six millions and a half. Considering the way in which the city was spreading toward the Harlem River, he thought it not impossible. New York, he felt, must be the most important city of the world of either ancient or modern times. He concluded by thanking the company for the reception they had given him. He had been promised by the committee that he would only have to remain an hour and a half, but now he found he had been here nearly four hours, and, of course, as he could not go to Manhattanville to-night, he might as well remain with them the whole night. [Loud applause followed the conclusion of His Honor's speech.]

3. *Commerce*—We recognize in the Chamber of Commerce a constant guardian of its interests. J. DePeyster Ogden responded to this toast, admitting that the Chamber of Commerce ought to be proud of the birth of this association, from which it undoubtedly sprung, and which it would not hesitate to call its parent. He dwelt on the value of commerce in building up the reputation of a country. In speaking of the prevailing crisis, he said that as a sailor was never made in calms, so a merchant was never tried by constant prosperity. It required the storm of adversity to bring out his qualities, and concluded by offering the sentiment—"The Boards of Trade and the Chamber of Commerce."

4. *The City Press*—It Heralds the Times, claims the Tribune, Posts its Courier, Journal-izes Commerce, gives the city a Commercial character, diffuses intelligence by Express, and by its illumination creates a Sun that shines on all, each an orb in a glaxy of light.

W. H. Fry responded to this toast.

5. *The Solid Men of the City*—They have given us a "Union" designed to unite science, art and literature, and to increase and perpetuate their influence, and are busy in binding with a magic chain the Old World and the New. May our city be always blessed by such benefactors of our race.

Peter Cooper responded, alluding to his connection with the Atlantic telegraph and the incalcuable value of the magnetic influence, and of science generally, and concluded by offering the sentiment "The development of science, destined to be a lamp in our path, and a light in the world's way, leading from nature to nature's God."

Song by the club—"A Voice from Our Fathers."

6. *Friendship in Trade*—Our association repudiates its negative, and insures its practice. Rev. Dr. Hutton responded.

Song—"Friendship's Greeting," by the club.

7. *The Manufacturers of Old England* and those who represent them. Responded to by Charles Congreve.

The toasts of "*Belgium*" and "*The American Hardware Manufacturers*" followed, to the latter of which the club sang the song "Go-ahead, Young Hardware Man," which was received with great enthusiasm. "*Friendship and Trade*" and "*The Modern Fast Tradesman*" were the concluding toasts, after which the festivities came to a close.

in the diagram which we reproduced a few weeks ago. This dinner is called the third annual dinner, but would be more correctly designated as the third dinner, the second havidg been held in 1858, while there was none in 1859, on account, we are advised, of the depressed condition of trade, owing to the financial disturbances which are alluded to in the

ODES

SUNG ON THE OCCASION OF THE

SECOND ANNUAL DINNER GIVEN BY THE HARDWARE DEALERS BOARD OF TRADE,

—AT THE—

St. Nicholas Hotel, Thursday Evening, January 14, 1858.

SUNG BY AMATEURS BELONGING TO THE TRADE.

A VOICE FROM OUR FATHERS.

AIR—*Be Kind to the Loved Ones at Home.*

Words by a member of the trade.

A voice from our fathers we'll welcome to night,
T'will tell of the days that are passed,
When those who sold Hardware the trade managed right,
And our fathers made fortunes to last;
When their stores in old Pearl Street were just the right size
To hold economical stocks,
And no costly marble in fancy arose
To destroy them on mercantile rocks.

Our fathers wern't anxious to prosper too fast,
Nor in haste did they wander astray
From the simple old maxims in practice with most
Of their grandsires—who throve in their day.
They labored in Hardware, and saved in their homes,
And they studied their profit and loss,
And cared not for trading in stocks or in bonds,
For in Hardware success was the best.

Then speak to us, fathers, we'll list with respect,
To the story of days that are past;
Your simple old maxims we should not neglect,
They sustained you, and sure they will last.
You left us with fortunes, you honored our trade,
And long may your comforts endure;
We'll prize well your virtues—the rules which you made,
And will thus make prosperity sure.

FRIENDSHIP'S GREETING.

AIR—*Sparkling and Bright.*

Words by a member of the trade.

Sparkling and bright in liquid light
May friendship our goblets gleam in,
And every feud we have often rued
Be scarce a thought we'll dream in.
Then join to-night with hearts as light,
In friendship's kindly greeting,
Like the bubbles that swim on the beaker's brim
And fade on the lips while meeting.

We'll smoke the pipe of peace to-night,
And bury competition,
And as a band of brothers join'd
We'll try to improve our condition.
Then join to-night, &c.

To Iron, Guns, and Nails we'll sing—
And bid you all be friendly,
And our Furnishing, Hollow-ware and Tin Pan friends
Will treat each other kindly.
Then join to-night, &c.

And to Germans, English, and Yankees too,
Who make the Goods we trade in,
A greeting we give, and may you live
In the friendship our song was made in.
Then join to-night, &c.

Oh! If mirth could arrest the flight
Of time, through life's dominions,
We Hardware men, in friendship's bonds,
Would shore Time of his pinions.
Then join to-night, &c.

But since delight can't stop the wight,
Nor Hardware feasts delay him,
Nor love himself can hold the elf,
Nor sober friendship stay him.
We'll join to-night, &c.

THE GO-AHEAD YOUNG HARDWARE MAN.

AIR—*Fine Old English Gentleman.*

Words by a member of the trade.

I'll sing you now a bran new song, made by a fresh young pate,
Of a go-ahead young Hardware man, who has paid a heavy rate,
Some four or five per cent. a month, on paper of long date,
And he has seen the elephant, 'tis true, as sure as fate,
This go-ahead young Hardware man, all of the modern time.

His store so large was hung around with samples of all sorts,
And he to get the goods, to Cliff or Beekman Streets resorts,
He never yet was known to say an order he'd refuse,
But will sell you axes, nails, or rope, on any time you choose,
Like a go-ahead young Hardware man, all of the modern time.

Our Hardware man I would'nt have you think was quite a fool,
He kept his books correctly, and did every thing by rule,
Each spring and fall to south and west his travelers he sent,
And the profits of his trade were nearly all in this way spent,
Our go-ahead young Hardware man, all of the modern time.

A very heavy rent he paid, for a marble fronted store,
As long as he could stand it, and then he paid no more—
And then he says, I either must assign or compromise;—
The creditors close their hearts at once, and open wide their eyes,
At this go-ahead young Hardware man, all of the modern time.

Now, before proceeding further, I hope that none will deem
That any thing offensive here, or personal I mean,
But let my words pass idly by, for none of us can tell
How soon a lot like his had been, may come to us as well,
Like this go-ahead young Hardware man, all of the modern time.

And now let's banish gloomy thoughts, and look for brighter days,
May our go-ahead young friend find out the error of his ways,
And when thirty years have passed away, and in the dust he's laid,
He yet may be remembered, as an honor to the trade,
This go-ahead young Hardware man, all of the modern time.

8. *Germany, the Beehive of Europe*—Young and old America delight in the benefits of her genius and industry, and recognize her claims as craftsmen. Responded to by Mr. Jellingham.

9. *France*—Unrivaled in science and art, America acknowledges her supremacy. Responded to by M. Perrine.

1860 Dinner.

The third dinner of the Hardware Board of Trade was given on the evening of January 18, 1860, at the St. Nicholas Hotel, in which nearly 300 gentlemen participated, the names of whom appear

foregoing report of the second dinner. The tables were tastefully decorated with amusing representations of Hardware, such as Sugar Padlocks, Gimlets, &c., and no pains were spared to make the occasion enjoyable and successful.

A good deal of care, we are advised by one who was actively concerned in making

arrangements for the dinner, was taken in selecting the committee of nine, who needed to be well acquainted with the tone and temper of the trade, as well as to have a general acquaintance with individuals, so that seats might be wisely allotted. In this respect they were remarkably successful, placing the congenial guests together without calling on any firm to know who they wished as companions.

It would appear that in the two previous dinners there was some confusion in seating the guests, and especial care was taken to remedy this difficulty. With this end in view a diagram showing the arrangement of tables and the location assigned to each guest was prepared several days beforehand, thus at the same time designating each one's place at the table and giving the names of their guests, and thus greatly promoting acquaintance and sociability. The price of the dinner was $5 a ticket, without wine, and the money was collected several days beforehand. Each ticket was inclosed in one of the diagrams and delivered about three days before the dinner, so that each party saw where his seat was and who was to be the companion, the effect of which, we are advised by one of the guests, was very pleasant. It was also a decided help to the guests who were to respond to their toasts.

A good deal of attention was given to the toasts and the securing of suitable responses. To make sure that there might be no disappointments the committee called upon those who were expected to respond several days before the dinner and presented their invitation and secured their acceptance. So heartily was the whole matter entered into, we are advised, that not one of those invited to speak declined.

The following are the names of committee who were intrusted with the responsibility of getting up the dinner :

JOHN W. QUINCY,
JOHN DAVENPORT,
CHARLES BLIVEN,
RICHARD P. BRUFF,
A. T. RUSSELL,
CHARLES VANDERVOORT,
JOSEPH L. CLARK,
MR. MORGAN (of Morgan, Quackenbush & Co.)
WILLIAM H. LIVINGSTON.

To the careful preparation made and the skill and judgment which characterized all the arrangements the great success of the dinner is to be ascribed, and we are advised that it entirely eclipsed its predecessors in every respect.

The chair was occupied by John W. Quincy, and among the guests occupying seats on either side were the following :

J. DePeyster Ogden, Peter Cooper, David Dows, president of the Corn Exchange; Jackson S. Schultz, president of the Leather Association; William A. Appleton, president of the Book Association; Rev. Drs. Vermilye and Vinton; President King of Columbia College, James T. Brady, Superintendent Pillsbury, and others.

The dinner was announced to commence at 6 o'clock, at which hour a majority of the gentleman were in attendance, but the procession to the dining hall was not formed until 7 o'clock, the hour having been spent in agreeable and lively social converse. The Committee on Arrangements discharged their onerous duties in an efficient manner, having introduced a new feature into the conduct of public dinners—namely, the preparation of a diagram of the tables, each seat having the name of its intended occupant upon it, so that there was no confusion in seating the guests.

Numberless ornaments, appropriate to the occasion and symbolical of the wealthy Hardware Guild, were placed at intervals along the board. Among these were the "Yankee Blacksmith," spade and saw emblems, pyramids of miniature tools, and several tiny nail kegs, bearing the devices of the Fall River Company, Mount Hope Iron Works, Sable Iron Works, Parker Mills, &c. An elegant gilded hammer, with anvil, was placed at the right of the president. From the gallery Dodworth's band enlivened the feast.

At 7.15 John W. Quincy, Esq., the president, called the assemblage to order, when the Rev. Dr. Vermilye invoked the Divine blessing. The company then proceeded to practically discuss the bill of fare, which contained, of course, all the delicacies of the season, and maintained the reputation of the St. Nicholas. Appropriate confectionary emblems adorned the tables, such as the Yankee blacksmith's emblem or the Hardware trade-groups of nail kegs. Dodworth's band discoursed some of their choicest strains while the members and guests were partaking of the bounteous repast spread before them. As soon as the cloth was removed the president called the assemblage to order, by striking an anvil, which was placed on the table, and said:

SPEECH OF THE PRESIDENT.

Gentlemen of the Hardware Board of Trade:

Allow me to express my thanks for the honor conferred in having been elected and more recently re-elected to the place I now occupy.

Gentlemen of the New York Hardware Trade, this occasion adds a third bright link to our festal chain, and may we hope that coming years shall continue to add to its bright length and afford us many happy returns. This is an assembly of gentlemen whose community of interests seem to require that such an opportunity should be annually afforded to see each others faces around the social board and to make stronger the golden bonds of friendship that do so much to make the pathway of life happy. Heaven has deeply implanted in the human mind social feeling, and unfortunate, indeed, is the calling that sets a man at variance with his brother. [Applause]. Although associated for no specific purpose of charity, literature, or science, there is a peculiar harmonizing and binding influence at this meeting, partaking of the same bounties, listening to the same words, the same music, and joining in the same songs in the soul-stirring merriment of a hearty laugh. Our trade comprises a great variety of articles. So extended has it become that what was once comprehended in a single assortment is now divided into many separate stores. Our gathering this evening represents not only the Shelf or General Hardware, but all the individual classes, such as dealers in metals, in tin plates, cut nails, bar iron, steel in its variety; also specific parts of trade by locality, as dealers in goods from Sheffield, Birmingham, France, Germany, Belgium, as well as our respected foreign agencies, and individual dealers in specific articles. Yet they are all children of the same parents, brethren of the same family, branches of the same noble Hardware tree. When we contemplate the great variety of goods to which we lay claim, comprising from "a needle to an anchor," extending to the railroad, the locomotive, ponderous trip hammers and iron shafts of many tons, not forgetting some of our larger specimens, such as iron stores, the Great Eastern and the Victoria Bridge across the St. Lawrence, we may very modestly ask, What would become of the world without Hardware? / [Laughter and applause]. Hardwaremen, however, are usually very retiring, yet the world would never know it unless we told them ; but we may console ourselves with the thought that the true gentleness is always modest. While we are among ourselves we can afford to glorify a little. We may ask what would the ladies do without our help? The needle is very small, but how many do they use? And what a wonderful work they perform with hundreds of tons of sheet steel, and how they expand upon its utility, will be more than intimated by a walk down Broadway. [Great laughter.] Then the Hardware pins, the ladies' weapons of offense and defense, too extended in their application to admit of going into particulars. Then, too, the sewing machines, that do more work than there was to be done before their introduction, and yet leave more work than ever to be done. We may omit their scissors and thimbles, and many lesser articles, which, were the ladies without them, a Hardwareman would be sought for to the ends of the earth. Our business, though made up of detail, is not simply a retail business; needles are sold by packages, scissors by the cask, pins by the case; and we receive orders for five-story iron stores by the dozen, steamships and bridges by the mile, and cut off to order. Five hundred quarto pages would not contain an enumeration of the articles of the Hardware line, although a hundred or two would contain an inventory of an ordinary shelf stock. It is a business that calls out the whole of a man's faculties; it has details enough to demand his closest attention, diversity sufficient to tax any memory, thought enough to expand any mind, calculation enough to tax the most arithmetical and enlarge the fullest judgment. A peculiarity is that the whole attention is aroused and required, and you find that the thorough follower of this vocation is rarely a man of fast objects, such as fast horses, fast games, fast sports, or fast in any form. It cultivates the intellect, it forms the mind for precision, and although the Hardwareman is a man more adapted for all kinds of business than is usually found elsewhere, it is not his purpose to fill the pulpit or the forum, to electrify the public with his eloquence, or to astound them with the discourses of hidden science; yet for all practical purposes of intelligent, social and domestic life, the discipline of his business makes him one of the safest men in any community. He is schooled to trial, matured to mental discipline, is taught by experience the life-giving influences of healthful exercise in work; and among no portion of the community can you find where a brighter intellect sparkles in every eye, where the face bears the mark of its own experience, and the body mold of active and vigorous exertion. Gentlemen, we are to account these attainments at their proper value. We are also to cherish what our business facilitates—that love of mercantile honor and those high attainments in morals without which all else is as nothing. No accumulation of riches, no

elevation of station, no honorable distinction is worth a name or a fame unless it leaves an unsullied honor and a fair retrospection. "An honest man is the noblest work of God," and may this be our highest ambition, our privilege to associate whatever is lovely and of good report with all which may honestly bear the name of a Hardwareman. [Applause.]

A glee club, composed of members of the trade, followed with a song written for the occasion—"Strike the Anvil." It was sung to the tune "Wait for the Wagon," the president striking the gilt anvil in time. We subjoin the first and last verses:

STRIKE THE ANVIL.

We have come from trade and trafficing,
From business and from care,
To join our annual greeting here,
And hail the opening year;
And while around the social board,
We'll mingle friend with friend,
To prove that while our Ware is Hard,
Our friendship has no end.

Now strike the anvil, one and all,
And make the welkin ring;
In toasts and songs this night we'll join,
And every chorus sing;
And let the outside world observe
That once a year at least,
The feuds of trade will not invade
Our Hardware annual feast.

TOASTS.

The following were the regular toasts, with the remarks which were made in response to them:

1. *The President of the United States.*
Music—"Hail Columbia," by Dodworth's Band; received with loud cheering.
2. *The Governor of the State of New York.*
Air—"Governor's March."

The president read a letter from Governor Morgan expressing his regret at being prevented by official duties from being present. He also read a letter from the Hon. George Briggs, from which we extract the following sentence:

I particularly appreciate the character of the Hardwaremen in our city for the reason that I know that they entertain conservative views, politically, a matter of great interest in this crisis of our public affairs, and that they are Union loving men, enlightened patriots, the respecters of all the laws of our common country—men who would preserve at all hazards in fraternal union this confederacy of States.

This sentiment was loudly applauded.

A communication was read from Mr. John Breed of Norwich, Conn., one of the oldest Hardwaremen in the country, and his health was drunk with great enthusiasm.

3. *The Chamber of Commerce*—A guardian of our commercial interests, the helpmeet of trade; may it ever occupy its present honorable position.
Music—"Thou Faithful Guardian."

J. DePeyster Ogden, president of the Chamber of Commerce responded to the third toast in an appropriate speech, remarking that it was an association like the Hardware Board of Trade that the Chamber of Commerce was indebted to as an essential element in its progress and advancement. The time might come, he said, when the apparently exhaustless sources of Great Britain in iron might fail, and that the resources should come from us. He told them not to be afraid, for their trade was still going on, and concluded by giving this sentiment: "Success and prosperity are the objects of your association, and may the dealer, the manufacturer and the consumer go on in harmony together."

4. *Morality and Cheerfulness*—Both happily taught in the Scriptures, and excellent attainments to relieve the hard wear of life.
Music—"All of Life is Love."

Rev. Dr. Vinton of Trinity Church responded in a happy manner to the fourth toast. When he looked upon the happy countenances before him he saw no evidence of Hardware at all, but when he looked at himself he felt as if he had been put under the screws. [Laughter.] He corrected the impression which prevailed when the company toasted Mr. Breed, by saying that Tubal Cain was the first Hardwareman. Before he would take his seat he would ask some philosopher to solve a problem which had never been solved, namely: What becomes of all the pins? [Uproarious laughter.]

5. *The Union*—No common bond; it was made by men who dug the ore, worked the metal and forged the chains which bind it together; they knew its value, and bequeathed it as a priceless inheritance to their children: let us imitate the holy patriotism of our fathers by our unyielding devotion to its protection and preservation.

The president announced the fifth regular toast, and called upon Peter Cooper to respond. Before Mr. Cooper rose to speak the Glee Club sang an original song, entitled the "Song of the Sledge Hammer," from which we take the subjoined verses:

I'M AN OLD SLEDGE HAMMER, ETC.

There's lots of prime old Hardware,
In all our States we feel,
And Freedom keeps her guard where
Each heart is true as steel;
Our traitors are but shammers,
Base metal bound to fly,
When Union's mighty hammers
The Nation's temper try.

And now in grand communion,
Let sledge and anvil be,
To pledge our Nation's union
From center to the sea;
With Freedom's banner o'er us,
True Hardwaremen we'll stand,
And sing the Union chorus,
God bless our noble land.

CHORUS.

I am an old sledge hammer,
Don't you hear me ring,
With good old Union's clamor,
And a Constitution swing?

Peter Cooper, on rising, was received with three times three and a tiger. He spoke as follows:

It will be, Mr. President, impossible for me, by any language, to add either strength, force or beauty to the thrilling sentiments you have drunk on this occasion. You have well declared that this union of States is no common bond. You have well said that this bond was formed by men who dug the ore, worked the metal and forged the chains that now bind together this grand confederation of States. You have well assured us that those men knew the value of the priceless inheritance bequeathed to us their children. If, Mr. President, it were possible for us, as a nation, to transport ourselves to some remote period of antiquity, and from thence be permitted to pass down the current of human events, amid the wrecks and wretchedness which have strewn the course of time with all those frightful monuments of human pride, weakness and folly—monuments that yet remain in their solemn grandeur, standing like beacon lights in the pathway of nations, warning us and all coming generations to beware lest a worse fate befall us—if it were possible for us to read aright those monuments of past experience, we should then be prepared rightly to estimate the value of the rich inheritance we possess—an inheritance won for us by the virtue, the toil, the suffering, the death of thousands of our patriot fathers. We should then know the worth of the inestimable right and privilege we enjoy—the privilege to form and carry on a government of our choice—a government formed on the will of those to be governed. I mean that high and holy privilege to "establish justice and to secure public welfare" by forming a government of the people, and for the people in its own operations. Such a government our fathers dug for us out of the mine of eternal truth and justice. They formed it in accordance with the great and glorious principle of right. They formed the government under which we live in the light of the experience of the past, guided by the law which binds all in every condition of life—to do unto others as we would have others do unto us. We cannot too often and too seriously reflect on the almost omnipotent power that the circumstances of birth, education and climate have exerted and are continually exerting to form different opinions in the different sections of our widespread country. Nothing can be more important for us as a people to bear in mind than the fact that charity was made the greatest of all virtues, because it is so constantly required to enable us to bear the faults and weakness of each other. [Applause.] I trust that it will forever be the pride and glory of every American to strengthen the bond of fraternal union—a bond which has given us prosperity at home and enabled us to command the pride and respect of the world. [Renewed cheers.] Where is the man with a heart in his bosom who can look with indifference on that bond—on these growing States and on the men who joined them together, not for a time, but for an everlasting Union? [Great cheering.] A Union that must be preserved—a Union that cannot be broken without causing the spirits of those men that formed it to sigh in sorrow over the crumbling ruins of all their brightest hopes for the future improvement of the condition of mankind. [Continued applause.] And now in the language of the sentiment you have drunk, I will say with all my heart, let us imitate the holy patriotism of our fathers by our unyielding devotion to protect and preserve the glorious Union under which we live. I only detain you to express the following sentiment:

The science and philosophy of government; the star of the world's hope; the business to study, understand and follow.

This sentiment was received with marked enthusiasm, the whole company rising and cheering for several minutes.

6. *The Clergy.*—Spiritual workers in Hardware, beating swords into plowshares and spears into pruning hooks—may their fires never go out nor their arms grow weary.
Music—"Old Hundred."

In response to "The Clergy" Rev. Dr. Vermilye spoke of the importance of the clergy speaking out their minds at the present time, though they should consider what they say, and, if in accordance with truth, should act upon it. He thought that the clergy would be a sort of balance wheel, if they were men of correct judgment and correct spirit, and if they were listened to at such times in proper utterance of their sentiments, good and not evil would result to the community. If the clergy were duly appreciated, the good and glorious fabric of our liberty would not only be sustained, but it would become stronger and stronger, and then we might hope to transmit its blessing to coming times, and that the union of the States will be perpetual.

7. *Education.*—

"'T is education forms the common mind;
Just as the gun is aimed the shot's inclined."

Music—"Alma Mater."

Responded to by President Charles King of Columbia College.

Music—"Gaudeamus."

Mr. William Fry rose to respond, amid prolonged cheers. He said:

Mr. Chairman and Gentlemen:—There are two kinds of feeders attached to the press. The first are the shirt-sleeved young gentlemen who feed Hoe's cylinders; the second are older gentlemen who go out to dinners and toasts and are also feeders. [Applause.] The former are very useful, the latter highly ornamental. Hardwaremen will understand that ornamental things are easily tarnished. I am somewhat so to-night. Two years ago, almost this month and night, with just such a sky overhead and just such boot smearing mud beneath, I was called to speak to the very same toast. I wanted to be brief, but you would not let me, so I now have little new to say. You know all about the press. You know that from its origin with Faust down to the Stanhope improvements and the present age of steam, it has been composed of and dependent on iron. The types, the stick and the steel are all metallic. Go, look at the press, and ponder its revolutions. It will remind you of the motions of the spheres, of the poetical stars in the azure of space, teaching infinity, and the harmony shed and showered by Divinity upon the world beneath. [Applause.] But I will not dwell. Newspapers are prepared in a hurry; hence they are badly prepared, else the proverb is a lie. And here let me tell you a secret. Most proverbs are lies. They were spoken before labor-saving machines gave men leisure to think—when savage beings cheated, and rapine and lust were rampant—before materialism was added to divine philosophy, and men had time to be good. Mr. Fry said that we had read history, and did great injustice to the dignity of labor. Medieval story told of robbers and marauders with iron pots on their heads, tin pans on their backs, stoves on their breasts, but said nothing of the toiling, hard-handed mechanics who forged the coats of mail. He had read 1000 agricultural essays and speeches, and they all placed tillage before mechanics, but the order was unjust. The mechanical arts preceded agriculture everywhere. The soil could not be broken without the spade and harrow. [Applause.]

9. *Law and Hardware*—They follow each other like faith and works, the one the ideal, the other the real. The material law is Hardware, while Hardware is physical law to evil doers. Both are old acquaintances and have long kept up a trade in manacles, handcuffs, grate bars, jacks, pickaxes, stone hammers and like fancy articles; may they keep out of each other's clutches and traps, and not like children of one family fall out and chide and fight.

Music—"Come, Brothers, Arouse."

James T. Brady replied to the ninth toast in a highly humorous speech, keeping the company in a roar from the commencement to the close of his remarks. Among other things he said he had read Helper's book, and they who knew his politics could well understand what an effort it was for him. [Cries of "good, good," and applause.] The sentiments expressed by the clergy gave him encouragement. "What sentiments you or I entertain," said Mr. Brady, "in one brief passage from this life to the next is of no earthly consequence, but what is to be done with the great American nation is a question of all time, and of so much regard to eternity as belongs to this life." He quoted from Oliver Wendell Holmes' poem on the "Union," and continuing, said that he considered it puerile, unmanly and to be the mere act of the demagogue to speak of the flag of our country as it had been spoken of. There were newspapers in the country who treated the subject of the Union as if it involved only the dull platitudes of a Fourth of July oration, "but may the great God of Heaven," said he, "dispense for me the mercy I so much need, spare me that I may not live to to see the time when the flag of the American nation shall be spoken of except with reverence and patriotism." [Loud and prolonged applause.] He had two reasons for expressing that wish. One was, that of ancestry, and the other, the honor of his life that he was born upon this soil. He had seen men who had gone forth to achieve con-

8. *The Press.*—It vitalizes civilization, refines humanity, its influence is everywhere, yet nowhere without Hardware, for where would then be the press or its impression?

THIRD ANNUAL DINNER

OF THE

Hardware Board of Trade,

AT THE ST. NICHOLAS HOTEL, JAN'Y. 18th, 1860.

SOUP.

Green Turtle. Printaniere.

FISH.

Boiled Salmon, lobster sauce. Broiled Striped Bass, sauce maitre d'dôtel.

RELEVES.

Boiled Leg of Mutton, English style.	Roast Sirloin English Beef.
" Capon, oyster sauce.	" Saddle of English Mutton.
" Turkey, celery sauce.	" Westphalia Ham, Champagne sauce.
" Washington Ham.	" Turkey, giblet sauce.
" Beef and Tongues.	" Goose, apple sauce.

COLD AND ORNAMENTAL DISHES.

Galantine de Dinde, la Soubise.	Aspic de Langue, à la Régence.
Hure de Troye, a la Tyrenne.	Aspic d'Huitres, à la Vantmlour.
Galantine de Canards, a la Corfe.	Filet de Volaille, à la Suly.
Jambon de Bayonne, a la St. Nicholas.	Aspic de Homard, à la Necker.
Bastion, en Bellevue, glace.	Ris de Veau, à la Louis XIV.
Galantine de Gibier, Historie.	Cervelle, decore, à la Hongroise.
Galantine de Chapon, à la Vaubon.	Pain de Foie-gras, à la Dunary.
Galantine d'Oie, sur socle, decoré.	Aspic de Filet de Faisan, à la Genoise.
Pavillon d'Anais, garni de Hâtelet.	Filet de Poisson, en Bellevue.
Caneton, en Bellevue, a la Reine.	Aspic de Caille, à la Pompadour.
Mayonnaise de Homard, à la Dublin.	Mayonnaise de Volaille, à la gelée.

ENTREES.

Ris de Veau, piques, en panier, à la St. Cloud.
Chartreuse de Faisan, farci, a la Parisienne.
Filet de Boeuf, pique, aux Truffes, a la Perigor.
Arcade de Canards domestiques, aux olives farcies.
Supreme de Volaille, bisqué, a la Pompadour.
Pigeons innocents, farcis, aux pointes d'asperges.
Croquette de Cervelle de Veau, a l'Espagnole.
Pain de Foie, chaud, garnis d'une Toulouse.
Côtelettes d'Agneau, en papillottes, à la Royale.
Pâte de petits Oiseaux, à la Ste. Helène.
Ailerons de Dinde, farcis, garnis de champignons.
Cuisses de Lapereaux, en bordure de pommes de terre.
Turban de Filet de Saumon, à la Grec.
Caneton de Canards, garni de fond D'Artichaud.
Casserolle de Ris, garni de Filet de Tortue, à la Chateaubriand.
Timbale de Macaroni, à la Napolitaine.

GAME.

Roast Canvas Back Ducks. Red Head Ducks. Roast Partridges.
Roast Saddle of Venison.
Broiled Quail, on toast, Roast Grouse.

VEGETABLES.

Stewed Tomatoes. Boiled Potatoes. Asparagus. Onions. Squash. Beets.
Baked Irish Potatoes. Fried Parsnips. Mashed Turnips. Boiled Spinach.

RELISHES.

Piccalilly. Celery. Spanish Olives. Cranberry Sauce. Apple Sauce.
Pickles. Worcestershire Currant Jelly.

PASTRY.

Peach Pies. Apple Pies. Mince Pies. Blackberry Pies.
Plum Puddings. Cognacsauce. Gelée au Champagne.
Meringues, en panier, garni, à la Parisienne. Crême renversée, à la Polonaise.
Charlotte de Russe, à l'Imperatrice. Blanc Mange, aux Amandes.
Fruits, glacés, à la Macédoine.

FANCY CONFECTIONERY.

All sorts of Hardware—Candy Tools. Mottoes, à l'Americaine. Cocoa Nut Drops.
Marchpane Francaise. Cosmopolitan Babies. Amandes pralinés.
Jenny Lind Cakes. Baisees, à la Crême. Conserve, à la Rose.
Gateaux, glacés. Tartelettes, au Confiture. Chocolat au Caramelle.
Biscuit, à la Pompadour. Cassettes d'Amandes amére. Choux aux Fraises.

ORNAMENTS.

The Yankee Blacksmith. Pyramids of Hardware Tools. Groups of Nail Kegs.
Emblem of the Hardware Trade. The American Eagle. Temple of Liberty.
Statue of the Genius of America. Grand Vase des Fleurs. The Indian Warrior.
Swiss Winter Scenery. Fontaine, à la Romaine. Pegode Japanese.
Cathedral Gothique. Souvenir d'Afrique. Monument Nationale.
Courtier of Louis XIV. Madame de Maintenon. La Grotte d'Amour
Ville de Napolitaine. Dr. Kane's Expedition. Corne d'Abondance.
Pyramids of Vanilla Ice Cream. Pyramids of Pineapple Ice Cream.

DESSERT.

Raisins. Almonds. Filberts. Pecan Nuts. Apples. Madeira Nuts. Coffee.
Ice Cream. Figs. Prunes. Pop Corn. Oranges.

Wynkoop, Hallenbeck & Thomas, Printers, 113 Fulton St., N. Y.

quests for the American banner. One of them (General Taylor) was derided and assailed sometimes, in the hot fervor of political diatribes, but he was always remembered as the great captain of the American army. [Cheers]. Also Scott, who, he thanked God, still survived, and in regard to whom the London *Times* predicted mortification and defeat. Both of those gallant commanders taught us the lesson which was afterward revealed in the accomplishments of a gallant gentleman, whose name he was proud to mention, although opposed to him in political sentiment—Fremont. [Applause.] He (Fremont) planted the American flag a little higher than anybody else, and nearer to that Heaven whose blessings it deserves. When the wild demagogues of the South were talking about dissolving and destroying this Union they were insulting the principles that resided in his [the speaker's] breast, and he hoped they were insulting the principles of the party to whom he belonged. Mr. Brady resumed his seat midst several rounds of cheers.

10. *England*—A noble example of the influence of Hardware. The latent metals of her soil, energized by the industry of her sons, are strength in battle and prosperity in peace. Hardware ever has been and is a main pillar in the edifice of her power, wealth and influence.

Music—The national song of "God Save the Queen," by the Glee Club.

This toast was responded to by Mr. Rogerson.

11. *Germany*—Her Hardware, like her sons, blends with our own and forms a natural link in the chain of the Hardware trade.

Music—"Where is the German Fatherland?"

The response to this toast was made by R. Fredericks.

12. *La Belle France*—A name always pleasing in its associations with art and manufactures; the beauty of finish is on all her touches, and her Hardware is as attractive and as irresistible as the grace and beauty of her Empress or the energy of her Emperor.

Music—"Partant pour la Syrie."

J. S. Day replied to this toast.

13. *Hardware*—As universal as the Yankee nation. With it we sew our clothes, write our letters, cook our food, food, plow our fields, arm our soldiers, pelt our enemies, and nail our flags to the mast. With it we build our ships and houses, and telegraph and print our news. Our Hardware roads are the smoothest, and our locomotive horses the fastest, and the trade has all kinds of bright chains of sympathy and kindness to bind them in unity. May our aims be accomplished, and our pockets filled with Hardware of the proper coinage.

Music—Second part of the "Song of the Old Sledge Hammer."

The remarks touching this toast were made by Abram S. Hewitt.

14. *Iron and Coal*—The strong foundation of a nation's wealth; without them poor, and with them rich, take what you will away.

Song—"Tubal Cain," by the Glee Club.

15. *Leather Association*.—Hardware is strongly attached to leather. They are reined and pull together when driving fast horses; they circulate well together when belted around pulleys; they join their labors on the soles of men, as well as on their understandings, in looking after their boots and shoes; in fact, there is nothing like leather—except Hardware.

Music—"Pop Goes the Weasel."

12. *Crockery and Glassware*—Always companions with hardware at the dinner table. It would be "hard" drinking without them, and they are the formation of our best dishes.

Music—"We Have Been Friends Together."

17. *Fire Department*.—Her Hardware machines render water invincible, and fire may as well yield to them as did the knowing coon to Davy Crockett's gun.

Music—"On the Field of Glory."

18. *Corn Exchange*.—Corn: Its wheat, rye, barley, oats, are all Hardware friends, and they are acquainted from the scythe and cradle; they have been engaged in the same field, whirled in the same mill, threshed at the same machine, associated at the same fire, and at last meet to be separated between knives and forks at the same table.

Music—"Coming Through the Rye."

19. *Trade and Commerce*—The thermometer of a nation's wealth. The duties we owe to the government fulfill the high duties we owe ourselves; their neglect is mental decay, poverty and weakness. Here, as elsewhere, union is strength.

Music—"Life on the Ocean Wave."

20. *Woman*—Made from the rib of a man, it has proved to be his better half.

Music—"Here's a Health to all Good Lasses."

Trade Items.

WALLACE & SONS, Ansonia, Conn., under date February 1, announce that they have opened an office in the Western Bank Note Building, Chicago, under the management of Geo. B. Miller and Geo. C. St. John, Mr. St. John taking charge in Mr. Miller's absence. A full line of samples of library, banquet, piano and table lamps, onyx tables, &c., will be kept on exhibition, but no stock will be carried.

THE HARDWARE HOUSE of F. H. Woodworth & Co., 704 Market street, Chattanooga, Tenn., was burglarized on the 29th ult., and 200 pocket knives, 60 razors, two Winchester rifles and 1000 rounds of ammunition were carried off. The value of the goods thus stolen is estimated at $450 to $500. The burglars gained access to the building by breaking a pane of glass with a billet of wood. It is presumed that the thieves were well acquainted with the disposition of the stock, as considerable judgment was exercised in the selection of the articles stolen.

SPELGER & HURLBUT, Hardware, Stoves and House-Furnishing goods, Seattle, Wash., have removed from 405 Pike street to their large new storeroom just completed in the Rauke Building, where they have increased accommodation and better facilities for the transaction of their business.

WE ARE ADVISED that E. T. Barnum, Detroit, Mich., has no connection whatever with the Canadian company known as the Barnum Wire Works of Toronto, which is referred to as having recently made an assignment. While Mr. Barnum was the founder of the latter concern he disposed of his entire interest in it several years ago, and though it continued to bear his name he has not since been in any way identified with it.

JOHN CHATILLON & SONS, whose factory, 85-89 Cliff Street, New York, was seriously damaged by fire on December 23, are preparing to put their buildings in a thoroughly fire-proof condition. It is their intention to put in iron pillars and iron joists with brick arches throughout the entire six stories, and to fit their buildings up with all the modern conveniences. The front walls of the three buildings, though safe, were so disfigured by the fire that they will be taken down and rebuilt as soon as the weather will permit. In the meantime they have purchased machinery, and have accommodated their workmen in adjoining buildings, so that there has been but slight interruption in filling orders promptly. In fact, they have more workmen now employed than before the fire occurred.

A PROMINENT MANUFACTURER, in connection with an extract from *The Iron Age*, November 14, 1889, referring to Poultry Netting and the different ways in which it is sometimes cheapened, such as by using light gauge wire, giving two instead of three twists, making it with less than regular number of meshes and galvanizing it poorly, gives the following additional points: That 33½ meshes in a 72-inch bale proves the mesh to be 2¼ inch, as the 2-inch mesh is 35½ meshes; and then calls attention to the fact that the list price of 2-inch Netting is 2¼ cents, while the list price of 2¼ inch should be 2⅜ cents.

MONTGOMERY & Co., 105 Fulton street, New York, are about issuing an elaborate catalogue of Tools and supplies of which they are manufacturers and importers. It is to be of extra heavy and fine quality paper, fully illustrated and bound in an appropriate manner.

W. C. STARR & SON, Richmond, Ind., are calling special attention to their Brass Finished Traces, which are referred to as elegant goods, resembling gilt, being chemically plated with pure copper, which keeps them from rusting while in stock. The Traces are made actual size of wire and actual number of links to the foot, and are all tested at 1800, 1600 and 1400 pounds strain to each Chain for Nos. 1, 2 and 3, so that there are, it is claimed by the manufacturers, no unwelded links in them. It is also stated that this test makes the links uniform in width. The drop links, where most of the wear comes, are one gauge heavier wire than the body of the chain, which makes them worth considerably more to the user.

JOS. F. MCCOY COMPANY, 26 Warren street, New York, have now in the printer's hands a catalogue of Cutlery, Clippers and Cutlery specialties, which will soon be ready for distribution. This, however, will be of a temporary character, as a more complete edition will follow later. They report business as being exceedingly satisfactory, and as receiving many voluntary orders in addition to those sent in by their representatives on the road.

A JOBBING HARDWARE HOUSE has been opened at Montgomery, Ala., under the firm name of Teague & Sons, composed of W. M. Teague, formerly in the Hardware business in Greenville, Ala., for the past 15 years senior member of the Hardware firm of Teague, Barnett & Co., and for the past nine years member of the wholesale grocery firm of Hobbie & Teague, and his sons, Wm. M., Jr., Robert S. and Abner J. Teague. The following extract from the circular announcing the above may be of interest:

The boys will have charge of the ship, assisted by the advice of the old gentleman, and such other help as he may be able to render them. We shall keep in stock a complete assortment of Hardware suited to the wants of the trade. With Montgomery's bright prospects, by reason of her central location, and her numerous lines of railroads already built and being built, we indulge the confident hope that the ship may float for many pleasant and profitable years to come. By strict attention to business, and a courteous consideration of the rights of all who may favor us with their patronage, we hope to establish a business that we shall be proud of, and that shall reflect no discredit upon our fair city.

W. R. OSTRANDER & Co., 195 and 197 Fulton street, New York, manufacturers of Speaking Tubes, Electric, Mechanical and Pneumatic Annunciators, &c., notice an increase in the number of Hardware merchants handling Electrical Goods. They are in almost daily receipt of inquiries regarding the line of goods made by them from the Hardware trade in various parts of the country.

We have received from the St. Joseph Pump Company, St. Joseph, Mo., manufacturers of the Perfection Water Elevator and Purifying Pump, a calendar for the current year. The lower portion is devoted to the calendar proper. The figures are printed in heavy type, and in addition to the figures the moon's changes are also given. The upper portion of the calendar is particularly attractive. The scene represented is a small girl holding a pitcher to the mouth of the pump, while a bright little boy, something after the Lord Fauntleroy style, is turning the handle. The turning of the handle seems quite an easy task, as the boy in question is using only one hand, the other being safely ensconced in his trousers pocket. Off to the left is a bright looking child, who is at that interesting age when children are clothed so that only the initiated are able to tell the sex. The whole makes an interesting picture, and the calendar will be prized wherever received. A silken cord is strung through eyelets at the top of the calendar for the purpose of hanging.

The John B. Varick Company, wholesale dealers in Hardware, Guns and Agricultural Implements, Manchester, N. H., advise us that they have been burned out. Involving as the fire did the destruction of their catalogues, price-lists, &c., the company request us to announce that they would be glad to receive from manufacturers and dealers copies of their lists with discounts.

Packard & Co., Greenville, Pa., have been succeeded by the Packard Hardware Company, who were organized February 6, 1892. The officers of the company are as follows: John R. Packard, president; G. B. Chase, treasurer, and Carl Buck, secretary. These gentlemen, with O. C. Brown and John B. Chase, constitute the board of directors.

We are in receipt of a copy of the Hammondsport, N. Y., *Herald*, in which the business prosperity of Geo. W. Peck & Co., dealers in Hardware, with stores at Bath, Pulteney, Prattsburgh and Cohocton, N.Y., is referred to. Mr. Peck began the Hardware business at Savona in 1876, and subsequently opened branch stores at Bath, Pulteney, Prattsburgh and Cohocton, the firm name becoming Geo. W. Peck & Co. From figures presented in the article alluded to above, we observe that the total sales of the Savona or pioneer establishment in 1876, the year in which it was started, were $4704 56, while the total sales for 1891 of the different stores conducted by the firm were $114,894.67. Practical business methods, liberal patronage of the newspapers and other methods of advertising and faithful employees are mentioned as contributing to the constantly increasing prosperity thus indicated.

In their advertisement in this issue C. E. Jennings & Co., 79 Reade street, New York, call attention to the Griffin Hack Saw, making the point that with less labor it will do more work and wear longer than other blades. They advise us that an improvement in tempering the blade has been made which prevents it from breaking, and the result is that it will wear longer with less liability to break than other Hack Saws.

Cleveland Stone Company, Cleveland, Ohio, have succeeded to the business of Walter R. Wood, manufacturer and importer of Grindstones, 283 and 285 Front street, New York, and will hereafter offer the goods formerly put on the market by him. The business thus acquired was established in 1840.

Dille & McGuire Mfg. Co., Richmond, Ind., for whom S. A. Haines is sales agent, in their advertisement on another page mention a number of points throughout the country, from Philadelphia and Boston to San Francisco and Seattle, at which their Diamond Lawn Mowers can be purchased. They also allude to the satisfaction given by this machine and the favor with which it has been received as evidenced in the fact that sales for 1892 are far in excess of any previous year, while their capacity is 50 per cent. greater.

H. O. Canfield, Bridgeport, Conn., is putting on the market a line of Molded Rubber Goods for mechanical purposes and announces that he is prepared to make special molds and work.

The Akron Tool Company, Akron, Ohio, announce that, having for a long time manufactured the well-known McNeil Tubular Steel Barrows for the late Grant McNeil, they are now continuing the business on their own account, and are prepared to take care of all orders in this line. They state that they have a large number of completed Barrows, as well as a large stock of material on hand, and, having added some additional machinery to their already well-equipped plant, they are now in better shape than ever before to take care of the trade in every way to the best advantage.

Frank Alexander & Co., Staunton, Va., have, we are advised, one of the most complete Hardware stores in that State, their establishment being specially built for the Hardware business. Many of their methods of handling and displaying goods were suggested by our articles on the arrangement of Hardware stores, which they have evidently put to good use. They mention that the Catalogue File described by C. T. Rosenthal, Batesville, Ark, to which the second prize in one of our competitions was awarded some months since, has been adopted by them, and has given much satisfaction.

John H. Graham & Co., 113 Chambers street, New York, in their advertisement on another page illustrate Lockwood's Flexible Leather-Back Curry Comb, which is referred to as made with the best selected leather backs, applewood handles, tinned rivets and seven steel bars. The advantages connected with the use of the Comb are also pointed out.

The Giant Lock Company, 23 Water street, Cleveland, Ohio, have appointed W. H. Dieffenbacher, 154 Lake street, Chicago, as their Western selling agent. The company advise us that their Sash Fast is meeting with much favor from architects and builders, and that it is now found in stock of the leading jobbers of the United States.

From Idaho.

From a well-informed Hardwareman in Idaho we have the following communication with reference to the substitution of net prices for list and discount. It will be observed that our correspondent has decided views upon the question, and expresses himself emphatically:

It is with a feeling almost of alarm that I note the effort that is being made to substitute net prices for the good old way of lists and discounts. I have been in the trade for over 30 years, and have always found it very easy to keep well posted on prices through the lists and discounts I have had at hand. Now if a customer wishes a price on any special article I can give it to him. With net prices I could not do so. I buy mostly through traveling men, and have many friends among the boys. If I wish a price on Bolts, Screws, Steel or Brass Goods, Stamped Ware, Granite Ware or any other of the thousand and one articles that are sold by list and discount, all that I have to do is to ask the discount, and I know all about it. Change to net prices and it would take a week to place an order that can now be placed in an hour.

Hardware in Mexico.

From a well-informed Hardwareman, whose views are entitled to weight, we have the following information in regard to the condition of American Hardware in Mexico. Our correspondent refers, it will be observed, to a number of different lines:

Thinking that a few notes on the kinds of Hardware used here will be interesting to your readers, I take pleasure in submitting the following: Most important is the fact that in this section of the country American Hardware is used almost to the exclusion of European goods, and it is only certain articles which are brought from Europe—England and Germany—on account of more favorable prices. When prices are the same the American article is given the preference.

Among the articles which are exclusively European are Enameled Iron Ware (cooking utensils), Cutlery, Corrugated Roofing, Wire Netting of all kinds, and certain kinds of cheap Locks. Bar Iron and Sheet Iron are also generally imported from abroad, as well as different kinds of Steel, although of these articles large quantities are also brought from the United States, as a great saving in time is thereby effected. Tools and Builders' Hardware are exclusively American, since the American article at a given price is always greatly superior in finish to like European goods. It is only in case of some articles in this line which are in the United States not made at a sufficiently low price (or, rather, in a sufficiently low grade) that English and German goods are handled. As to finish, an average German Door Lock looks at the side of an American one like an old-time "snake fence with stakes and riders" in comparison with a good Barb Wire Fence. Speaking of Barb Wire, I must say that this article enjoys a very large demand here, especially so during the last few years. Of farm implements the only article used to a great extent are Pony Plows, these being used in very large quantities. Mowers, Threshing Machines and like machinery are few and far between.

A great many peculiarities are to be noted here: For instance, Narrow Wrought Fast-Pin Butts are used to the almost complete exclusion of all other kinds; all Windows and Doors are hung on these. The most common fastening for a door is a Hasp and Padlock, Rim or Mortise Locks being used only on the better class of residences. Doors are also generally provided with a lifting Handle, in lieu of a Knob or Pull. All windows are protected by upright bars of round Iron fastened in crossbars of flat Iron, giving a house the appearance of a prison until one is accustomed to the sight.

Price-Lists, Circulars, &c.

EMERSON & FISHER COMPANY, Cincinnati, Ohio: Vehicles. Catalogue 1892, showing the line of Buggies, Surreys, Phaetons, Carriages, Light Delivery Wagons, Spring Wagons, &c. It is neatly printed on paper of good quality, the cuts being well executed. The catalogue is not bound in the usual form, the pages being secured by metallic rings, which also permit its being hung up.

PLACE MFG. COMPANY, Oswego, N. Y.: Tube Expanders and small tools. Illustrations and prices are given of Tube Expanders, Flue Cleaners, Stay Bolt Taps, Pipe Wrench, Screw Punches, Hydraulic Punching Bear, Hydraulic Screw Punch, Screw Plates, Pipe Vises, &c.

THE HAWLEY CLAMP COMPANY, Syracuse, N. Y.: Circular relating to the Hawley Clamp. The Clamp is illustrated and enumeration of its advantages given. Testimonials in regard to it are also supplied, together with a list of foundries in which the goods are used.

STANDARD FIBER WARE COMPANY, Mankato, Minn.: Wall calendar for 1892. Leaflets for the several months are attached to a large card, on which is printed a very pleasing picture entitled "The Passing Storm." A specimen of the company's product in the shape of a heavy fiber ware board is used as a backing for the calendar to insure safety in the mails.

PETER A. VOGT, Buffalo, N. Y.: Catalogue of the Refrigerators which as manufacturer and wholesale dealer he is putting on the market. The goods thus offered are illustrated and dimensions and other particulars given. Mr. Vogt calls attention to the fact that he has manufactured this line of goods for the past 26 years, making improvements that practical experience has suggested.

BRADLEY & DANN, New Haven, Conn.: Catalogue, 1892, representing the Agricultural Implements, Hardware Specialties and Woodenware which as wholesale dealers they are offering to the trade: The catalogue is finely printed, and in its early pages a list of the manufacturers whose goods are carried by the firm is given. A notice is also issued stating that since the catalogue went to press the firm have consolidated their business with that of Edward N. Carrington, forming a joint-stock corporation under the name of the Bradley, Dann & Carrington Co.

RICHARDI & BECHTOLD, Bellaire, Mich.: Catalogue 1892. It represents their varied assortment of Woodenware, including Scoops, Chopping Trays, Vinegar Measures and Funnels, Round and Square Butter Molds, Butter Ladles, Kraut Forks, Butter Spades, Potato Mashers, Rolling Pins, Pastry Spoons, Towel Rollers, Salt Boxes, Spice Cabinets, Bread Plates, Bosom Boards, &c. They refer to the fact that they were visited by a disastrous fire in June, 1891, which entirely destroyed their largest factory and necessarily caused much delay in filling orders on some goods. Their new factory is now completed, much enlarged and fitted with the most modern machinery for wood working. The increased railroad facilities at Bellaire also permits them to guarantee more prompt shipments in future.

HOLLANDS MFG. COMPANY, Erie, Pa.: Catalogue, 1892, in which their line of Vises, Machinists' and Plumbers' Tools, Fuel Gas Burners, &c., are shown. The company in their introductory remarks call special attention to the quality and workmanship of their Vises, the castings in which are described as made from a mixture specially adapted to this class of work. All of their Swivel Base Vises are equipped with Hough's Improved Self-Adjusting Swivel Base, the simplicity and strength of which are referred to.

TURNER & SEYMOUR MFG. COMPANY, Torrington, Conn.: Appendix to 1890 catalogue, which showed the Brass Goods put on the market by this company in the way of Shade Pulls, Pole Trimmings, Curtain Chains, Vestibule Rods, Vestibule Brackets, Tassel Hooks, Picture Nails, Molding Hooks, &c. The appendix comprises those goods that are staple, with an enlarged line of entirely new designs which are adapted to any class of trade. It is gotten up in the same general style which characterizes their catalogue, and represents satisfactorily the interesting line of goods put on the market by the company,

SILVER PLATE CUTLERY COMPANY, Birmingham, Conn.: Catalogue covering the different styles and designs of Plated Table Cutlery which they manufacture in full lines of Carvers, Knives, Forks, Fruit Knives, Picks and Cracks. The company state that during the present season they have largely increased their facilities and that they will continue to add constantly to their already large variety of designs. The attractive and artistic plates in this catalogue were, we are advised, made in the etching department of the company from photographs also made by them. They are very creditable.

Bronson Supply Company.

FOR SOME TIME the question of increasing the capital stock of the Bronson Supply Company has been under consideration by their stockholders, and we notice that the capital stock of this company has now been increased to $100,000, the majority of it, we understand, being quickly taken by its original incorporators, who are at present large stockholders in this company. The company were originally started for the purpose of manufacturing Wrought Steel Hollow Ware under the now well-known name of "Never-Break." The company have largely advertised their ware under the name of Never-Break, which is their trade-mark, and by an extensive use of printers' ink and the personal canvass by their travelers, many of whom are old, experienced men in the business, they advise us that they have not only established their Never-Break with the trade in every State in the Union, as well as in Canada and many foreign countries, but have acquired such an extended and favorable acquaintance with the trade in general that they have now concluded to utilize their facilities for introducing and selling goods, by selecting a few other good specialties to carry in connection with their Never-Break Hollow Ware. This was the occasion of the recent increase of their capital stock, to enable them to make a desirable selection of other lines, and handle the whole business to the best advantage.

The specialties so far added to their line, of which they are the sole agents in New York, Eastern Pennsylvania and the Atlantic States, is the Columbian Enameled Ware, made by the Bellaire Stamping Company of Bellaire, Ohio.

They are also sole agents for the United States and Canada for the Excelsior Planished Steel Baker and Roaster, made by Messrs. M. F. Koenig & Co. of Hazelton, Pa.

Negotiations are in progress for other lines, which will doubtless be added very shortly.

At a meeting of the stockholders, held February 3, the Board of Directors as elected was composed of the following gentlemen: R. A. Harman, who is extensively connected with many of Cleveland's largest enterprises, among them the Cleveland City Forge and Iron Company and the Avery Stamping Company; Douglas Perkins, a Cleveland capitalist and one of the best and most favorably known citizens in the place; A. E. Bronson, the originator of the company; H. Oakey Hall and M. S. Near of New York city. Messrs. Hall and Near have been the resident managers of the Bronson Supply Company for New York city almost from the original starting of the company to make Never Break goods.

The Board of Directors met immediately after the stockholders' meeting adjourned and elected the following officers to serve for the coming year: R. A. Harman, president; A. E. Bronson, vice-president; H. Oakey Hall, treasurer, and M. S. Near, secretary.

We are informed that the Never-Break Ware is now made in several different styles, with mirror polish, tinned inside, tinned all over, and "porcelained."

This well-known company thus enter on their new departure under very favorable auspices.

It Is Reported—

That D. W. Townsend is to engage in the Hardware business at Sheldon, Iowa.

That W. Buckley is to open a Hardware store at Spring Lake, Mich.

That the Hardware firm of Challacombe & Ramsey, Hillsboro, Ill., has dissolved partnership by mutual consent. The business will be continued by John R. Challacombe.

That Adolph Schulte has purchased the interest of his partner, Mr. Fredericks, in the Hardware store at Fort Wayne, Ind., heretofore conducted by them jointly.

That a new Hardware store will soon be opened in Wellston, Ohio, under the proprietorship of Edward Long and E. E. Donaldson.

That a new Hardware store will be started at Canton, Ohio, in a few weeks. The firm will be composed of Byron Bowman, Harmon Anthony and Marion Bros.

That C. E. Seybold & Sons' Hardware store at Jeanette, Pa., was destroyed by fire a short time since.

That C. S. Ellis has commenced the Hardware business at Corning, N. Y.

That the Morrell Hardware Company, Aspen, Col., have purchased the entire stock of A. E. Jones.

That the Montrose Hardware Company have been incorporated at Denver, Col. The incorporators are T. B. Townsend, H. J. Cornish and E. C. Cornish, with headquarters at Montrose

That John Oster will soon erect a building 25 x 90 feet at East Duluth, Iowa, in which he will carry on the Farm Implement business.

That Henry A. McDonell has severed his connection with the McDonell Hardware Company, Bay City, Mich., and will probably locate in Chicago.

That Thomas Cross will commence the Hardware business at Edenburg, Ohio.

That O. F. Strayer has purchased C. H. Falcon's Hardware store at Mercersburg, Pa.

That S. J. Saint's Hardware store at Sharpsburg, Pa., was burglarized on the 27th ult. A dozen Revolvers and some fine Pocket Knives were stolen.

That the firm of J. V. Vrooman & Sons, Stove and Hardware dealers, Schenectady,

N. Y., has been dissolved by the retirement of J. V. Vrooman. The business will be hereafter conducted by his sons under the firm name of J. V. Vrooman's Sons. Mr. Vrooman has been for 38 years in the Hardware business.

That George Foults, Wayland, N. Y., has moved his Hardware business to new quarters

That burglars entered N. H. Platt's Hardware store at Campbell, N. Y., on the 28th ult. and blew open the safe. They secured less than $5, but damaged the store greatly.

That the Hardware business formerly carried on by the late A. G. Strong, Burlington, Vt., will be continued by Mrs. Strong for the present.

That Geo. S. Dameral has sold his Hardware store at Thompson, N. D., to John Cameron and William Smith.

That L. B. Canfield and W. W. Cary have purchased the Hardware, Implement and Harness business owned by W. A. Waddington & Co., at Filley, Neb., the firm name being Canfield & Cary.

That Wm. Miller's Hardware store, Grand Rapids, Mich., was robbed a week or two ago. The amount secured was small.

That William Auer has opened a first-class Hardware store in Chicago.

That C. P. Ross, Waverly, W. Va., has become a partner in the A. G. Jackson Hardware Company, Parkersburg, W. Va.

That R. A. Moler's Hardware store at Oakdale, Pa., was destroyed by fire on the 26th ult. A loss of $8000 was sustained.

That William Kerr, lately a member of the firm of Clarke, Kerr & Thorne, St. John, N. B., has become associated with John M. Robertson, and the two will now carry on a wholesale Hardware business under the firm name of Kerr & Robertson. They have secured the premises 47 Dock street, and will commence business about the 15th inst. Both gentlemen are thoroughly familiar with the Hardware trade in all its branches, having been connected with it for 30 years.

That Frank Cole & Co.'s Hardware store at Grand Rapids, Mich., was badly damaged by fire on the 1st inst.

That the Warren Hardware Company, Warren, Ohio, have been incorporated, with a capital stock of $35,000.

That the store of Blaine & Prewitt, Hardware dealers, Taylor, Texas, was destroyed by fire on the 30th ult. Loss, $1200 to $1500, with no insurance.

That Hardwick Bros. have commenced the Hardware and grocery business at East Waco, Texas.

That A. P. Sargent has opened a Hardware store at Valparaiso, Neb.

That the store of Frank E. Walter & Co., Hardware dealers, Morrellville, Pa., was entered by burglars on the 26th ult., and a number of Shot Guns, Revolvers and Pen Knives taken.

That C. W. Young has purchased the interest of J. W. Doubleday in the Hardware firm of C. W. Young & Co., Jamestown, N. Y. Directly after this transaction Mr. Young sold to Wilson & Van Tyle the Hardware department of the business, reserving the Tin and Galvanized Iron department for himself.

That A. W. Locklin has sold his interest in the Hardware business at Gloversville, N. Y. to J. P. Heacock, who will continue.

That Joseph McClaire has started in the Hardware business at Harmon, N. Y.

That D. A. Sovereign has sold his Hardware businees at Los Angeles, Cal , to J. P. Mathes.

That W. Y. Reynolds has entered the Hardware business at Geneseo, Ill.

That Van Holde & Merson, who purchased H. K. White's Hardware stock at Marion, N. Y., last fall, opened for business on February 1.

That A. Walker of Covington, Pa., is to engage in the Hardware business at Woodhull, N. Y.

That the wholesale Hardware firm of Stewart & Montgomery, Rock Island, Ill., dissolved February 1, Captain Montgomery retiring. Dr. Stewart will continue the business.

That the A. T. Koop Hardware Company, Greenville, Ohio, have sold their store to J. P. Duffy & Co of Cincinnati.

That Miller's Hardware store at Ohio City, Ohio, was destroyed by fire on the 22d ult. Loss, $2000.

That the Adams Hardware Company of Jacksonville, Fla., have been incorporated with a capital stock of $50,000. The incorporators are Mark R. Bacon, Thomas J. Adams, J. Irene Adams and Conrad E. Hyde.

That C. B. Dexter will open a new Hardware store at Bangor Maine, about February 15.

That Grimes Brice has sold out his Hardware business at Fillmore, Cal., to Breveton & Goudge.

That Blakely & Co. have commenced the Hardware business at Chatsworth, Ill.

That Howlett Bros. are new Hardware and Implement dealers at Tampico, Ill.

That J. N. Dempsey has engaged in the Agricultural Implement business at Taylorville, Ill.

That Frankford, Ind., has a new Hardware firm, the style of which is Dinwiddie & Gaddis.

That Garlow & Warren have entered the Implement business at Harlan, Iowa.

That Balcom Park Company, Le Mars, Iowa, dealers in Implements, have sold out.

That C. F. Gardiner, Omaha, Neb., dealer in Hardware and Stoves, is out of business.

That J. D. Clark, Hardware merchant, Corvallis, Ore., sold out his business to J. R. Smith, who will continue it.

That as soon as the weather will permit work will be commenced on a new three-story brick block at Winnipeg, Man., which when completed will be occupied by H. S. Wesbrook, dealer in Implements. The structure will be 99 x 56 feet.

That Norman & Halverson have succeeded J. J. Coughlin, Hardware dealer, at Dawson, Minn.

That the McMaster Hardware Company, Springfield, Mo., are remodeling their store with a view to greater convenience and more attractive arrangement.

That on February 15 William Rimmerman will open a new Hardware store at Lincoln, Ill.

Exports.

PER BARK LUARCA, JANUARY 13, 1892, FOR PORT NATAL, SOUTH AFRICA.

By J. H. Williams & Co.—6 cases Iron Wrenches.
By Collins & Co.—24 dozen Picks, 80 dozen Handles.
By H. W. Peabody & Co.—37 packages Farming Implements, 11 packages Hardware, 1 case Corn Shellers, 3 cases Farming Implements.
By Strong & Trowbridge.—150 reels Barb Wire.
By W. H. Crossman & Bro.—311 cases Hardware, 32 cases Hardware, 496 cases Agricultural Implements and Parts, 50 kegs Nails.
By Coombs, Crosby & Eddy.—1 case Hay Racks, 6 cases Bird Cages, 4 cases Hardware, 14 cases Tools, 3 crates Corn Shellers, 5 cases Tools, 2 cases Oil Stoves, 1 case Tools, 5 cases Steel Axles, 6 cases Tacks, 21 cases Plows, 10 ses ca Scales, 2 casks Pumps, 45 packages Horse Nails, 1 case Tools, 3 crates Churns, 1 barrel Hardware, 1 case Axe Handles, 2 cases Plow Parts, 3 cases Tools, 1 case Axes, 4 packages Corn Shellers, 1 case Hardware, 1 case Axes, 1 case Plow Handles, 5 packages Plated Ware, 3 dozen Clothes Wringers, 6 dozen Axes, 1 case Ice Cream Freezers, 1 case Wrenches, 1 case Hardware, 1 case Hammers, 1 case Carpenters' Tools, 1 case Hardware, 20 cases Plow Handles, 1 case Hoes, 3 cases Corn Shellers, 3 cases Steel Hatchets, 1 case Cutlery, 12 kegs Nails, 2 cases Irons, 1 barrel Sieves.
By W. H. Crossman & Bro.—6 crates Ladders.

PER BARK ST. PAUL, JANUARY 18, 1892, FOR PORT NATAL, SOUTH AFRICA.

By Norton & Son.—35 cases Plows and Fixtures, 3 cases Corn Shellers, 12 Stove Trucks, 18 Hay Cutters, 25 dozen Axes and Hatchets, 1 dozen Scales, 6 cases Pumps and Fixtures.
By Sherman & Lyon.—14 cases Fire Arms, 15 cases Metallic Cartridges.
By Corner Bros. & Co.—101 cases and 1 bundle Hardware.

PER BARK RUDOLPH JOSEPHY, JANUARY 18, 1892, FOR DUNEDIN, NEW ZEALAND.

By W. K. Freeman.—20 cases Axes, 4 packages Lamp Goods, 18 cases Horse Nails, 13 cases Axes.
By R. W. Forbes & Son.—4 packages Air Guns and Parts, 4 packages Hardware, 14 dozen Axes and Hammers.
By W. H. Crossman & Bro.—4 cases and 4 packages Lamp Goods.
By Hartley & Graham.—65,000 Cartridges, 2500 Empty Cartridge Shells, 1 case Fire Arms.
By Rogers, Smith & Co.—5 cases Plated Ware.
By Henry W. Peabody & Co.—25 cases Horse Nails, 21 packages Hardware, 5 cases Horse Nails, 10 packages Lampware, 2 cases Sand Paper. 2 cases Pumps, 1 bale Cordage, 12 cases Horse Nails, 1 barrel Scoops, 4 cases Horse Nails, 1 case Farming Implements, 1 case Cutlery, 1 case Pumps, 4 cases Horse Nails, 1 case Farming Implements, 36 packages Hardware, 10 cases Wringers, 1 case Bolts, 2 packages Farming Implements, 1 box Plated Ware, 5 packages Lampware, 10 cases Hardware, 1 dozen Wringers, 20 cases Hardware, 20 packages Hardware, 1 case Brass Nails, 5 cases Nails, 9 cases Tools, 200 reels Barb Wire, 3 cases Lanterns, 13 cases Nails, 1 case Tinware, 5 cases Hardware, 4 packages Lawn Mowers, 6 cases Wringers, 8 packages Hardware, 15 cases Nails, 38 packages Lawn Mowers, 2 packages Lampware, 2 cases Seed Sowers.

PER BRIG PLOVER, JANUARY 19, 1892, FOR EAST LONDON, SOUTH AFRICA.

By Arkell & Douglas.—3 packages Carriage Hardware, 5 Washers, 4 packages Hoes, 170 kegs Nails, 109 cases Agricultural Implements, 2 packages Sash Cord, 96 cases Hatchets, &c., 4 packages Churns, 4 cases Hardware, 9 dozen Rakes, 10 packages Carriage Hardware, 14 cases Sash Weights

SUPPLEMENTARY SHIPMENTS, PER BARK RUDOLPH JOSEPHY, JANUARY 18, 1892, FOR DUNEDIN, NEW ZEALAND.

By Fayette R Plumb.—11 cases Axes.
By Strong & Trowbridge.—1 case Hardware.
By S Hoffnung & Co.—5 cases Hardware, 1 case Strops.
By R W. Cameron & Co.—1 dozen Carpet Sweepers, 1 bale Rubber Packing, 11 packages Lamp Goods, 1 case Hardware, 5 dozen Axes, 1½ dozen Braces, 3½ dozen Saws, 9 boxes Nails, 2 boxes Sash Balances, 1 case Sash Cord, 7 cases Hardware, 4 boxes Nails, 4 cases Axes, 1 case Washita Stone, 1 case Emery Wheels, 1 case Sandpaper.

SUPPLEMENTARY SHIPMENTS PER BARK ST. PAUL, JANUARY 18, 1892, FOR PORT NATAL, SOUTH AFRICA.

By W. H. Crossman & Bro.—189 cases Agricultural Implements, 90 kegs Nails.

PER BARK COLBURGA, JANUARY 23, 1892, FOR SYDNEY, N. S. W.

By Meriden Britannia Company.—2 boxes Silver-Plated Ware.
By R. H. Dana & Co.—3 packages Emery Wheels, 1 case Tackle Blocks.
By Healy & Earl.—2 boxes Hardware, 4 boxes Blowers.
By Winchester Repeating Arms Company.—7 cases Guns, 4 cases Cartridge Shells.
By Edward Miller & Co.—43 packages Lamp Goods.
By Marlin Fire Arms Company.—3 cases Rifles.

By Pairpoint Mfg. Company.—3 casks Silver-Plated Ware.
By V. Basanta.—1 case Washita Stones, 1 case Hardware, 1 case Steel Squares, 1 case Bench Screws.
By Sherman & Lyon.—8 crates Wheelbarrows.
By the F. B. Wheeler Company.—1 case Brushes.
By W. K. Freeman.—150 boxes Lanterns, 4 casks Tackle Blocks, 6 cases Hardware, 1 box Iron Rivets.
By Wm. E. Peck.—8 boxes Axes.
By R. W. Forbes & Son.—4 cases Hardware, 1 package Hair Clippers.
By H. W. Peabody & Co.—5 packages Farming Implements, 56 packages Hardware, 5 crates Shellers, 50 cases Crayons, 1 cask Lamp Goods, 20 crates Pumps, 94 cases Hardware, 3 cases Lampware, 10 cases Horse Nails, 2 cases Scoops, 58 packages Lawn Mowers, 1 case Nails, 1 crate Traps, 1 barrel Hoes, 18 packages Corn Mills, &c., 1 case Hardware, 2 cases Carpet Sweepers, 2 packages Hardware, 2 cases Nails, 7 packages Fire Arms, 54 cases Cartridges, 4 cases Nails, 6 cases Wringers.

Paints and Colors.

It should be understood that the prices quoted in this column are strictly those current in the wholesale market, and that higher prices are paid for retail lots. The quality of goods frequently necessitates a considerable range of prices.

The various preliminaries in shaping affairs for the spring season campaign in Paints and Colors have been practically all completed, and salesmen who look after the near-by trade, as well as those whose energies are devoted to more remote localities, are now hard at work. In this city and immediate vicinity building operations do not proceed in an entirely gratifying manner and that fact has a certain measure of restraining influence upon purchases of house-painters' Specialties. There is also a very conservative tendency among buyers of Paints adapted to particular uses, so that staple goods and specialties alike are momentarily rather slow in the local and near by markets. The local experience is, to all accounts, very similar to that encountered by salesmen who are working up the out-of-town trade. At all events, orders come forward in a perfunctory sort of way and it would seem a reasonable deduction from the statements as to general conditions which come to hand that the out-of-town trade are quite as reserved as near-by and local retailers, resting content with going slow for the time being. In the condition of the market for base materials there has been no radical change. If anything, the movement has favored a lower level of cost for various goods and encouraged the idea among distributors and consumers that there is no likelihood of manufactured goods being any dearer right away.

White Lead.—Corroders' representatives are busily engaged in the capacity of securing orders and conducting an educational campaign to impress upon consumers the merits of the commodity they have for sale, incidentally expatiating upon the relative cheapness of pure Lead and fine tinting Colors, as compared with various mixtures and compounds. To all accounts, the efforts in that direction are fairly well rewarded, but the representatives of manufacturers of the cheaper varieties are equally as industrious, and it is an open question where the greatest progress is making. Whatever the facts in this particular may be, matters have not reached a crisis where competition goes beyond temperate bounds. That is to say, no cutting of prices is indulged in by sellers of corroders' product, and evidence is wanting of any remarkable inducements being held out by manufacturers of mixed Leads. As to the volume of business, about all that can be said is that it is very fair, all things considered.

Zincs.—Returns made to the Census Bureau show that the production of American Oxide last year was unprecedentedly large, and that comparatively little surplus was carried over at the close. Since the opening of the new year orders to a liberal extent have been placed, and while the productive capacity is greater than it has ever been before, the amount of business in hand proves sufficient to keep matters in very good shape. There is no departure from the "combine" prices, at all events, nor the slightest sign of any pressure to secure orders. In foreign brands business is running about the same as it usually does at this season and former prices for the various brands are adhered to, although market price for base material has depreciated considerably of late at the European centers of supply.

Colors.—Weakness in the market for Quicksilver prompts a disposition to look for lower prices for Quicksilver Vermilion, but no change has been made thus far by manufacturers of first-class article and the figures for cheaper varieties remain the same as they have been for some time past. Other dry Colors remain stationary and without new feature. Oil Colors have undergone no change since the revision referred to last week. Business has increased somewhat, but there is apparently plenty of room for improvement.

Oils and Turpentine.—In the Oil trade the past week has been an uneventful one, With few exceptions buyers' operations were conducted on extremely conservative line of policy, indicating that imperative wants have gone further than any other matter of consideration in shaping buyers' operations and it is in rare instances only that seemingly adverse conditions carried weight among sellers. Thus cheaper Lard and a semi-panic in Cotton are without visible influence upon the market for Lard Oil or Cotton-Seed Oil and the spread of the idea that the cost of Linseed is likely to be higher ere long fails to stimulate action among buyers of Linseed Oil. Prices for the goods specified remain as steady as do those for other products that are comparatively free from outside influence and business proceeds in routine manner of the most pronounced type.

Linseed Oil.—There are still some indications that buyers who would take carload lots for prompt shipment may be supplied at a lower price than 34¢, but the offering at less than that price is exceedingly vague, and it would be hazardous to quote below 34¢ @ 35¢, as to size of lot. It is no difficult matter to purchase for prompt delivery at those figures, however, but on deliveries further ahead than March or April sellers are more reserved and the impression gains ground that prices will be higher in the spring months. Among city manufacturers there is a pronounced display of better prices in the near future, but for the present orders are taken at 37¢ for domestic and 56¢ for Calcutta seed product. Business has been somewhat larger the past few days but is running very little, if at all, above the average for the season.

Cotton-Seed Oils.—With the cotton market in a very depressed condition and Southern trade generally in rather poor shape, buyers of Cotton-Seed Oil are extremely conservative. European advices of weak foreign markets for the Oil also have a more or less adverse bearing, and business at present is strictly on the hand to mouth order. However, the movement of supplies is in this direction and that fact serves to steady values. Prime crude brings 25¢ to 25½¢ and prime Summer Yellow 29¢ to 29½¢, while the lower grades are held at corresponding figures. Transactions have been chiefly in lots of a few hundred barrels, the largest being about 750 barrels slight "off" grade Summer Yellow at 28½¢ for export.

Lard Oil.—The average cost of raw material has been lower than in either of the two preceding weeks, but that circumstance is without visible effect upon the market for Oil. In any event city pressers report a steady demand for their product and hold prices firmly on the basis of 55¢ @ 56¢, while outside brands at 54¢ appear to have been closely sold up. Low grades have also moved off well at relatively as good prices.

Olive Oil.—Prices for merchant quality in barrels have ruled irregular and rather weak, without leading to freer movement. Parcels on the spot were sold at 62¢ @ 63¢; down to 60¢ was named for lots afloat, and as low as 58¢ @ 59¢ for future shipments, without stimulating business.

Cocoanut Oil.—Fairly liberal purchases of Ceylon product have been made at 5¾¢ and a shade under, but importers' holdings are now comparatively light, and 5¾¢ @ 5¾¢ is now asked for spot stock.

Fish Oils.—Some modification of prices for manufactured Whale Oil have been made, but no changes in Sperm or Menhaden are announced. Crude product is firmly held, but selling slowly.

Spirits Turpentine.—Slow demand and fairly free offering of supplies have operated to give the market rather weaker tone, and at present a flat condition of affairs exists. Sales have been made the past few days at 34¢ @ 34½¢, as to style of package.

The trustees of the Walter A. Wood Mowing and Reaping Machine Company of Hoosick Falls, N. Y., met February 1 at the residence of C. E. Dudley Tibbits in Troy. The board was organized by the election of the following: President, C. E. Dudley Tibbits; vice-president, W. H. Nicholas; secretary, Charles M. Coulter; treasurer, P. S. McGowan; assistant treasurer, Geo. S. Robinson. The Executive Committee will probably be the same as last year. Howard H. Burden presided at the meeting until the election of the president, and those present were Walter P. Warren, J. Hobart Warren, John Wood Griswold, Geo. S. Robinson, R. Edson Starks, W. H. Nicholas, Charles M. Coulter, P. S. McGowan, J. Russell Parsons, Mr. Tibbits and Mr. Burden. The selection of the officers was unanimous. Walter P. Warren, J. Russell Parsons and P. S. McGowan of the company left February 5 for St. Paul, Minn., where a meeting is to be held to effect a permanent organization of the Walter A. Wood Harvester Company of St. Paul. C. E. Dudley Tibbits, president of the company, left a day later for St. Paul. Hugh Reid Griffin, who has been the London agent of the Wood Company, went West with the directors. It is understood that he will be the manager of the new company at St. Paul. A gentleman interested in the Wood Company says that at the St. Paul meeting a full set of officers will be elected, and steps will be taken to establish at or near St. Paul the largest and most complete establishment ever known for the manufacture of harvesting machines. During the Western trip of the Wood directors a few months ago the control of the Minneapolis Harvester Company was secured, with many valuable patents, and the new company will have the exclusive right to their manufacture in Minnesota. The prime cause of the establishment at St. Paul of a large plant for manufacturing the Wood machine is the fact that the cost of the transportation from Hoosick Falls made it impracticable to place the machine in the Western market to compete with large establishments in the West. The establishing of the plant in the West saves this important item, and will give the company an advantage not heretofore enjoyed. The gentlemen interested in the Wood Company at Hoosick Falls will largely control the stock of the St. Paul corporation. Governor Merriam of Minnesota is president of the temporary organization at St. Paul.

Wrought-Iron Gate.

The accompanying illustration of a gate or door for the outside of public buildings demonstrates the proficiency to which American manufacturers have attained in this direction. The design, as shown, was submitted by the Ludlow-Saylor Wire Company, St. Louis, Mo., and was accepted for the use of the Third National Bank of that city. It is made of black wrought iron, graceful and light in appearance, but substantial in construction, and harmonizes with the other prominent features of the building.

Wrought-Iron Gate.

Improved Grain Sampler.

Stacy & Douglas, 207 Kasota Building, Minneapolis, Minn., are offering this article, as illustrated herewith. It consists of two brass tubes, one tube inserted within the other, with valves cut through both alike. This allows the grain to pass into the inner tube when opened, the sampler being closed by a rotary movement. The sample of grain when drawn is poured out into sample sack through the inner tube at the end of the handle. The samplers are made in 44 and 52 inch lengths. The 44-inch improved grain sampler and its use is referred to as follows: The improvements consist of a shear cut-off added to the holes of the inner tube, so that in closing the sampler when filled with grain, it moves easily through the grain, closing the holes without friction or catching and cutting kernels of wheat or other grain. Also another valuable improvement added is discharging the grain from sampler. Instead of pouring it out at the lower holes of sampler, as heretofore, scattering the grain, the discharge port is at the end of the handle, through the inner tube, which allows the grain to run into the sample sack quickly without scattering the sample drawn, and is easily and quickly operated. For State Department inspection the 52-inch brass-tube sampler, with steel points, 1½ inches in diameter, is used. It has a shear cut-off on the inner tube, which allows the sampler to be closed easily without cutting kernels of grain. There is a partition to the lower part of the inner tube to keep the grain separate from the upper part, and an extra valve at the lower part of the inner tube allows this portion of the sample of grain to be discharged by itself and kept separate. Also, when desired, a single sample can be drawn from any part of the car or bin through this extra valve and discharged by itself. The grain in upper part of sampler is discharged through the end of the handle from the inner tube, and is operated easily and quickly. The 52 inch sampler is used and recommended by the Minnesota Grain Inspector.

Improved Grain Sampler.

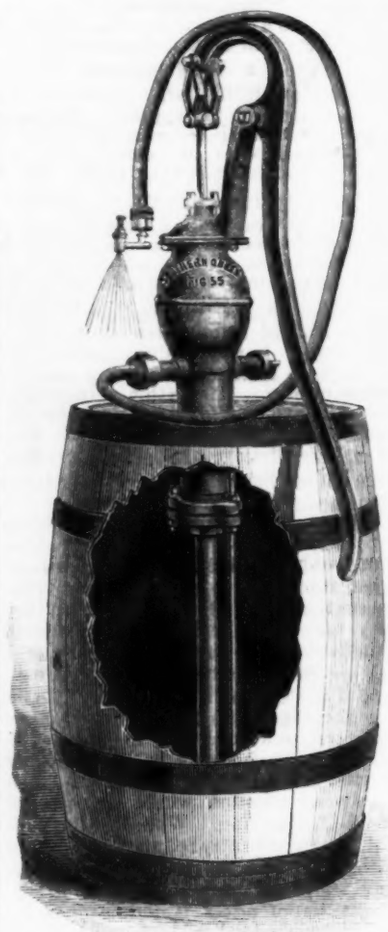
The Universal Sad Iron.

The Universal Sad Iron Company, Milwaukee, Wis., are putting on the market the sad iron shown herewith. In the use of this sad iron no stove is required, the desired heat being secured by a fire within the iron, such fire being easily started. The company suggest the use of hardwood charcoal for fuel, with a little alcohol. This Sad Iron is light and easy to handle and is economical, costing but a few cents for coal per day. It is heavily plated, so that no starch adheres to it. The time consumed in running to and from a hot stove to change irons is obviously saved. The holder is part of the sad iron and cannot be detached from it and is thus always in place. Another point to which the manufacturers refer is that no stove is needed to heat the iron, thus doing away with the most objectionable feature of ironing on a hot day. The irons are made in two sizes for family use, weighing 6 and 7 pounds, one size for dress and cloak makers' use, weighing 10 pounds, and 2 sizes for tailors' use, weighing 18 and 22 pounds.

The Universal Sad Iron.

The Southern Queen Spraying Pump.

The accompanying illustration represents the above-named pump, which is manufactured by the Field Force Pump Company, Lockport, N. Y. It will be observed that the pump is represented ready for use, being inserted in the barrel, part of which is broken away. The manufacturers state that this pump has not the power or

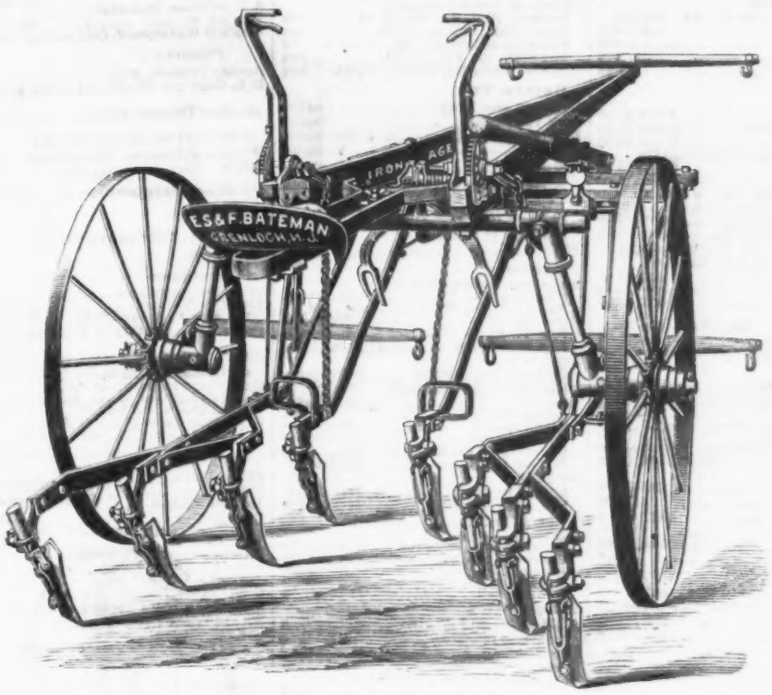


The Southern Queen Spraying Pump.

capacity of their Empire or Perfection, but has been placed on the market to meet the demand for a low-priced spraying outfit with all improvements. The striking feature of the pump is that it stirs the liquid automatically. The outfit consists of the pump with suction pipe and strainer, a return pipe for stirring the liquid, 5 feet of discharge hose and the company's combination Vermorel nozzle.

The Iron Age Riding Cultivator.

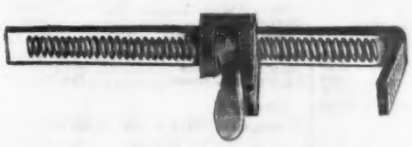
E. S. & F. Bateman, Grenloch, N. J., are offering a riding cultivator, known as the Iron Age, in common with their other farm and garden implements, as shown in the accompanying illustration.



The Iron Age Riding Cultivator.

The entire frame is of steel, including the axle, making a comparatively light and neat-appearing implement. It is stated that it is constructed in a most thorough manner and is handsomely finished. The axle is held in place by a single bolt, giving the operator an opportunity of replacing the same, when worn, with but little trouble or expense. It is claimed that guiding the teeth by the feet is almost entirely dispensed with, and by the use of a single lever all misplaced hills are easily and quickly dodged. It is shown that by the same lever the independent pair of teeth are so completely under the control of the operator that the two teeth can be opened out to pass a wide-spreading plant, or by simply depressing the lever, brought so closely together as to thoroughly cultivate the space between hills. Attention is called to the manner of attaching the teeth, having a steel standard which can be instantly adjusted in depth or angle of cut, or removed altogether.

It is remarked that the outside teeth, with their section of frame, can be quickly removed, reducing the cultivator to six teeth. The teeth sent out on the cultivator are 2½ inches in width and 10 inches long, but any of the Iron Age points and shares can be used. A pair of turning plows, shields and fallow-tooth attachment also accompany each cultivator. It is stated that the wheels and gangs are quickly adjusted in width, the seat in hight, and that special effort has been made to have the implement very close geared, making it especially adapted to the small fields of the Eastern truck farmer.



The Josef Patent Universal Clamps.—Fig. 1. —Core-Box Clamp.

The Josef Patent Universal Clamps.

E. E. Josef Mfg. Company, Buffalo, N. Y., are putting on the market the clamps represented in the accompanying illustrations—Figs. 1 and 2. Fig. 1, it will be observed, shows a core-box clamp and Fig. 2 a flask clamp. These clamps are referred to as instantly adjusting themselves to any size flask, no wedges or clamping irons being required, and when in position are entirely free from projecting parts, making it possible to roll the flask without disturbing the fastenings. The clamps are simple in construction and are described as made of the best malleable iron. Their strength, lightness, durability and cheapness are points made in regard to them by the manufacturers.

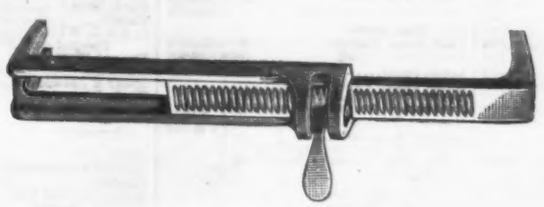


Fig. 2.—Flask Clamp.

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CURRENT HARDWARE PRICES.

FEBRUARY 10, 1892.

Note.—The quotations given below represent the Current Hardware Prices which prevail in the market at large. They are not given as manufacturers' Prices, and manufacturers should not be held responsible for them. In cases where goods are quoted at lower figures than the manufacturers name, it is not stated that the manufacturers are selling at the prices quoted, but simply that the goods are being sold, perhaps by the manufacturers, perhaps by the jobbers, at the figures named.

Adjusters, Blind.

Domestic.....₩ doz $3.00, 33⅓%
Excelsior.....₩ doz $10.00.....50&10&5%
North's.....list net @10%
Zimmerman's—See Fasteners Blind.

Ammunition—See Caps, Cartridges, Shells, &c.

Anvils.—

Eagle Anvils, ₩ ℔ 10¢.....15@15&5%
Peter Wright's.....11@11½¢
Armitage's Mouse Hole.....10½@11¢
Armitage's Mouse Hole, Extra.....12@12½¢
Trenton.....10@10½¢
Wilkinson's.....10½@11¢
Moore & Barnes Mfg. Co.....33⅓%

Anvil Vise and Drill—

Millers Falls Co., $18.00.....20%
Chesney Anvil and Vise.....25%
Allen Anvil and Vise, $3.00.....40&10%
Star.....45&5%

Apple Parers—See Parers. Apple, &c

Augers and Bits—

Douglass Mfg. Co.
Wm. A. Ives & Co.
Humphreysville Mfg. Co.
French, Swift & Co. (F. H. Beecher, P. S. & W. Co
Rockford Bit Company
} 70&10@70 &10&5%

Cook's, Douglass Mfg. Co.....55%
Cook's, N. H. Copper Co.50&10@50&10&5%
Ives' Circular Lip.....60%
Patent Solid Head.....30%
C. E. Jenning & Co., No. 10, extension lip.....40%
C. E. Jennings & Co., No. 30.....60%
C. E. Jennings & Co., Auger Bits, ₩ set, 33⅓% quarters. No. 5, $5; No. 30, $3.50.20%
Lewis' Patent Single Twist.....45%
Russell Jennings' Augers and Bits.35&10%
Imitation Jennings' Bits.....60@60&10%
Pugh's Black.....20%
Pugh's Jenning's Pattern.....4 9
Car Bits.....60@60&10%
Car Bits, P. S. & W. Co.....60&10%
Snell's Car Bits.....60%
L Hommodieu Car Bits.....15&10%
Forstner Pat. Auger Bits.....20%
Cincinnati Bell-Hangers' Bits....30&10%

Bit Stock Drills—

Morse Twist Drills.....50&10&5%
Standard.....50&10&5%
Cleveland.....50&10&5%
Syracuse, for metal.....50&10%
Syracuse, for wood (wood list).30@30&5%
Cincinnati, for wood.....30&10%
Cincinnati, for metal.....45&10%

Expansive Bits—

Clarks' small, $18; large, $26..35@35&10%
Ives' No. 4, ₩ doz $50.....40%
Swan's.....40%
Steer's, No. 1, $25; No. 2, $22.....35%
Stearns' No. 2, $48.....30%

Gimlet Bits—

Common.....₩ gross $2.75@3.25
Diamond.....₩ doz $1.10.....25&10%
Bee.....25@25&5%
Double Cut, Shepardson's.....45@45&10%
Double Cut, Cs. Valley Mfg. Co....30&10%
Double Cut, Hartwell's, ₩ gro.....$5.25
Double Cut, Douglass'.....40&10%
Double Cut, Ives'.....60@60&10%

Hollow Augers—

Ives
French, Swift & Co.
Douglass'
} 33⅓@ 33⅓&10%

Bonney's Adjustable, ₩ doz $43....40&10%
Stearns'.....30&10%
Ives' Expansive, each $4.50.....50&5%
Universal Expansive, each $4.50.....30%
Wood's.....25@25&10%
Cincinnati Adjustable.....25&10%
Cincinnati Standard.....25&10%

Ship Augers and Bits—

L'Hommedieu's.....15&10@15&10&5%
Watrous'.....15&10@15&10&10%
Snell's.....15&10@15&10&5%
Snell's Ship Auger Patt's Car Bits, 15&10@15&10@5%

Awl Hafts—See Hafts, Awl.

Awls—

Awls, Sewing, Common.₩ gr. 85¢@90¢
Awls, Should. Peg.....₩ gr. $1.50@1.55
Awls, Pat. Peg.....₩ gr. 35¢@38¢
Awls, Shouldered Brad..₩ gr. $1.30@1 40
Awls, Handled Brad...₩ gr.$2.50@$3.00
Awls, Handled Scratch..₩ gr.$4.0 @4.50
Awls, Socket Scratch..₩ doz, $1.10@$1.20

Awl and Tool Sets—See Sets, Awl and Tool.

Axes—

	Plain.	Beveled.
First quality, best brands.	$7.00 @	$7.50
First qual., other brands	6.62½ @ 6.75	
Second quality	6.00	6.5

Axle Grease—See Case, Axle.

Axles—

No. 1...3¼@3½¢, No. 2, 5¢@5½¢
Nos. 7 to 14.....6%&10%
Nos. 15 to 18.....47½% 70%
} 3% cash

Nos. 19 to 22
Concord Axles, loose collar.....4½@6¢
Concord Axles, solid collar.....5½@7¢
National Tubular Self-Oiling.....33⅓@33⅓&5%

Bag Holders.—See Holders, Bag.

Balances—

Spring Balances.....40%

No.	2000	20	30
Chatillon, ₩ doz.....	$0.80	0.95	1.75 net

Chatillon Straight Balances.....40%
Chatillon Circular Balances.....50&10%

Barb Wire.—See Wire, Barb.

Bars.

Crow—

Cast Steel.....₩ ℔ 3½¢
Iron, Steel Points.....₩ ℔ 2¢

Basins, Wash—

Standard Piberware, No. 1, 10½-inch, $2; 12-inch, $2.85; 13½-inch, $3.75; 15-inch, $5.25.

Beams, Scale—

Scale Beams, List Jan. 12, '92...50&10@50&10&5%
Chatillon's No. 1.....40%
Chatillon's No. 2.....50%
Custer's.....33⅓%

Beaters—

Egg—

Dover.....₩ doz $1.50
Duplex (Standard Co.).....₩ doz $1.25
Rival (Standard Co.).....₩ doz $1.00
Duplex Extra Heavy (Standard Co.)..... ₩ doz $2.50
Bryant's.....₩ gro $14.00
Double (H. & R. Mfg. Co.), ₩ gro. No. 0, $12.00; No. 1, $15.00; No. 2.....$36.00
Easy (H. & R. Mfg. Co.).....₩ gro $12.00
Triple (H. & R. Mfg. Co.).....₩ gro $16.50
Spiral.....₩ gro $4.25 @ 4.50
Improved Acme (H. & R. Mfg. Co.)..... ₩ gro $9.00
Paine, Diehl & Co.'s.....₩ gro $24.00
Silver & Co .....₩ doz $5.50

Culinary—

Keystone, P.D.&C., Each, No. 1, $1; No. 2, $3.....20 %

Bells—

Cow—

Common Wrought.....60&10%
Western, Sargent's list.....70&10%
Kentucky, "Star".....20&10%
Kentucky, Sargent's list.....70&10%
Kentucky Durham.....70&10
Dodge, Genuine Kentucky.....70&10&10%
Texas Star.....50&10@50&10&5%

Door—

Gong, Abbe's.....33⅓&10%
Gong, Yankee.....45&10%
Gong, Barton's.....40&10@50%
Crank, Taylor's.....25&10%
Crank Brooks'.....50&10&2%
Crank Cone's.....10%
Crank, Connel's.....20&10%
Lever, Sargent's.....60&10%
Lever, Taylor's Bronzed or Plated....net
Lever, Taylor's Japanned.....25&10%
Lever, R. E. M. Co.'s.....50&10&2%
Pull, Brook's.....50&10&2%

Electric,

Wollensak's.....20%
Bigelow & Dowse.....20%
Taylor's.....20%

Hand—

Light Brass.....70&10%
Extra Heavy.....70
White.....70%
Silver Chime.....33⅓&10%
Globe Cone's Patent).....25&10@35&
Miscellaneous—
Call.....40@40&5%
Farm Bells.....₩ ℔ 3½@3½¢
Steel Alloy Church and School Bells..40%

Bellows—

Blacksmiths'.....60&10@60&10&5%
Molders'.....40&10@50%
Hand Bellows.....40&10@50%

Belting, Rubber—

Common Standard.....70@70&10&5%
Standard.....70@70&5%
Extra.....60@60&10%
N.Y.B.&P.Co., Carbon.....60%
N.Y.B.&P.Co., Diamond.....50%
N.Y.B.&P.Co., Para.....40%

Bench Stops—See Stops, Bench.

Benders and Upsetters, Tire.

Stoddard's Lightning Tire Upsetters..15%
Detroit Perfected Tire Bender.....15%

Bits—

Auger, Gimlet, Bit Stock Drills, &c., see Augers and Bits.

Bit Holders—See Holders.

Blind Adjusters—See Adjusters, Blind.

Blind Fasteners—See Fasteners, Blind.

Blind Staples—See Staples, Blind.

Blocks—

Ordinary Tackle, list May 20, 1889... 70&10@—%
Cleveland Block Co., Mal. Iron.....50%
Moore's Novelty, Mal. Iron.....50%
Sure Grip Steel Tackle Blocks.....25%

Boards, Stove.

Wood Lined Crystal.....50%
Oxidized.....45%
Embossed.....50%
Paper Lined Zinc.....55%
Crystal.....55%
Embossed.....55%
New Tacoma.....55%

Bolts—

Carriage, Machine, &c.—

Com. list June 10, '84.....70&10&12½&2%
Genuine Eagle, Norway, list Oct., '84... 80@80&10%
Phila. pattern, list Oct. 7, '84..75@75&10%
R.B.&W., old list.....70%
Machine, list Jan. 1, 1890..... 75&10@75&10&5%
Bolt Ends, list Jan. 1, 1890..... 75&10@75&10&5%

Door and Shutter—

Cast Iron Barrel, Square, &c..70@70&10%
Cast Iron Shutter Bolts.....70@70&10%
Cast Iron Chain (Sargent's list)...65&10%
Ives' Patent Door Bolts 60&10@60&10&5%
Wrought Barrel.....70@70&10%
Wrought Square.....70@70&10%
Wr't Shutter, all Iron, Stanley's..60&10%
Wr't Shutter, Brass Knob, " ..40&10%
Wr't Shutter, Sargent's list.....60&10%
Wr't Sunk Flush, Sargent's list....55&10%
Wr't Sunk Flush, Stanley's list....50&10%
Wr't B.E.Flush. Com'n " ....55&10%

Stove and Plow—

Stove.....60%
Plow.....60&5%
R. B. & W., Plow.....55%

Tire—

Common, list Feb. 28, '83.....65%
Port Chester Bolt and Nut Company:
Empire, list Feb 28, '83.....65%
Keystone, Philadel., list Oct. '84....80%
Norway, Phila., list Oct. '84.....75%
American Screw Company:
Norway, Phil., list Oct. 16, '84.....75%
Eagle, Phil., list Oct. 16, '84.....80%
Philadel., list Oct. 16, '84.....80%
Bay State, list Feb. 28, '83.....65%
R.B.&W., Philadel., list Oct. 16, '84....80%

Borers, Tap.

Common and Ring.....20&10%
Ive's Tap Borers.....33⅓&5%
Enterprise Mfg. Co.....20&10&80%
Clark's.....33⅓@35%

Borax.....₩ ℔ 9½@10½¢

Boring Machines—See Machines, Boring.

Bow Pins—See Pins, Bow.

Boxes, Wagon.

Per ℔.....2½¢

Braces.—

American Bit Brace Co.:
Nos. 10, 12, 20.....60&10%
Nos. 11, 21, 24, 27.....70&10%
Nos. 22, 23, 25.....60&10&5%
Nos. 13, 26, 36, 37.....70&10&5%
Ball Braces, net.....$1.12 to $1.25₩
Amidon's
Barker's Imp'd Plain.....75&10 @80%
Barker's Imp. Nickeled.....65&10@70%
Ratchet.....75&10@80%
Eclipse Rachet.....60%
Globe Jawed.....40@40&10%
Corner Brace.....40@40&10%
Universal, 8 in., $2.10; 10 in.....$2.25
Buffalo Ball.....$1.10@$1.1
Barber's,
Nos. 1 to 16.....50@ M &10%
Nos. 30 to 32.....50@50&10%
Nos. 40 to 63.....50&10@50&10&5%
Saxton's,
Barker's Imp. Polished.....75&10@80%
Barker's Imp. Nickeled.....65&10@70%
Ratchet, Polished.....50&10@50%
Ratchet, Nickeled.....40&10@50%
Buffalo Ball.....net, $1.10@$1.15
Bartholomew's,
Nos. 25, 27 and 30.....50&10@60&5%
Nos. 117, 118, 119.....70@70&5%
Common Ball, American.....$1.00@$1.10
Fray's Genuine Spofford's..50&5@50&10%
Fray's No. 70 to 130, 81 to 133, 207 to 414 50&10%
Ives' New Haven Novelty.....70@70&5%
New Haven Ratchet.....60&5@60&10%
Barber Ratchet.....60&5@60&10%
Barbers.....60&5%
Spofford.....60&5@60&10%
Osgood's Ratchet.....40&10@50%
P. S. & W. Co., Peck's Patent.....60%

Brackets—

Shelf, plain.
Regular list.....65@70%
Sargent's list.....66⅔@66⅔&10%
Shelf, fancy.
Sargent's list.....66⅔@66⅔&10%
Other makes at a wide range of prices.

Bright Wire Goods—See Wire.

Broilers—

Henis' Self-Basting.	Inch	9	10	9x11
	Per doz	$4.50	5.50	6.50

New Haven.....50%
Wire Goods Co .....65&10%
Morgan Odorless.....₩ doz $12, 33⅓%

Buckets, Well.

Galvanized—

Hill's.....₩ doz, 12 qt, $4.25; 14 qt, $5.2
Iron Clad.....₩ doz. 14 qt, $4.25@$4.5
Helwig's Flat Iron Band.....$3.7
Helwig's Wired Top.....₩ doz $4.00

Bull Rings—See Rings, Bull.

Butchers' Cleavers—See Cleavers Butchers'.

Butts—

Brass—

Wrought Brass.....80@80&10%
Cast Brass, Tiebout's.....50%
Cast Brass, Fast.....33⅓&10%
Cast Brass, Loose Joint.....33⅓&10%

Cast Iron—

Fast Joint, Narrow.....50&10&5@60%
Fast Joint, Broad.....50&10@60%
Loose Joint.....
Loose Joint, Japanned.....
Loose Joint, Jap. with Acorns..
Parliament Butts.....
Mayer's Hinges.....
Loose Pin, Acorns.....
Loose Pin, Acorns, Japanned...
Loose Pin, Acorns, Japanned, Plated Tips.....
} ..70&10 @75%

Wrought Steel—

Fast Joint, Narrow.....
Fast Joint, Lt. Narrow.....
Fast Joint, Broad.....
Loose Joint, Broad.....
Table Butts, Back Flaps, &c ....
Inside Blind, Regular.....
Inside Blind, Light.....
Loose Pin.....
} .70&10 @75%

Bronzed Wrought Butts.....50%

Calipers—See Compasses.

Calks, Toe—

Gautier, One Prong, Blunt.....5½@6¢
Burke's, One Prong, Blunt.....5½@6¢
Burke's, Two Prong, Blunt.....7½@8¢
Burke's, One Prong, Sharp.....6½@7¢

Can Openers—See Openers Can.

Caps—

Percussion, ₩ 1000—
Hicks & Goldmark's and Union Metallic Cartridge Co.
E. L. Waterproof, 1-10's.....35@37½
E. B. Trimmed Edge, 1-10's.....47@50
E. B. Grnd. Edge, Cent. Fire, 1-10's.....
Musket Waterproof, 1-10's.....47@50
G. D.....50@55
A. B. Genuine Imported.....37@30
Eley's E. E.....45¢
Eley's D Waterproof, Central Fire...$1.80

Primers—

Berdan Primers, $1.00.....2
U. L. Caps (for Sturtevant Shells) $1.00.....2
All other Primers, $1.20.....2

Cards—List January 28, 1891.

Watson's Cotton, Wool, Horse and File.....2%

Carpet Stretchers—See Stretchers Carpet.

Carpet Sweepers—See Sweepers Carpet.

Cartridges—

Rim Fire Cartridges.....50&10&2 %
Rim Fire Military.....15&2 %
Cent. Fire, Pistol and Rifle.....25&10&2 %
Cent. Fire, Military and Sporting 15&5&2 %
Blank Cartridges, except 22 and 32 cal., additional 10 % on above discounts.
Blank Cartridges, 22 cal., $1.75.....2 %
Blank Cartridges, 32 cal., $3.50.....2 %
Primed Shells and Bullets.....15&5&2 %
B. B. Caps, Round Ball, $1.75.....2 %
B. B. Caps, Con. Ball, Swgd., $2.00.....2%

Casters—

Bed.....
Plate.....
Shallow Socket.....
} Brass....55@55&10% Others...60@60&10%

Deep Socket.....40&10%
Yale Casters, list May, 1884...30&10@40%
Yale, Gem.....60@60&5%
Martin's Patent (Phœnix).....45&10@50%
Payson's Anti-friction.....70%
Payson's Truck.....70%
Giant Truck Casters.....30%
Stationary Truck Casters.....60&10%
Socket Truck Casters.....50%

Cattle Leaders—See Leaders, Cattle.

Cement.

Victor Elastic.....5 ℔ pails ₩ ℔ 5¢

Chain—

Trace, Wagon and Fancy Chains. List revised April 21, 1890.....60@ 60&10%

American Coil, in cask lots.

3-16	¼	5-16	⅜	7-16	½	⅝	¾
$7.60	5.45	4.45	3.80	3.85	3.50	3.40	3.25

Less than cask lots, add ½¢@¼¢ ₩ ℔.
German Coil, list Oct. 6, 1890...60@60&5%
German Halter Chain, list Oct. 6, 1890 60@60&5%
Covert Halter.....50&2%
Covert Traces.....35&2%
Covert Heel Chain.....50&2%
Oneida Halter Chain.....60@60&5%
Galvanized Pump Chain.....₩ ℔ 5½@5¢
Jack Chain, Iron.....75&10@80%
Jack Chain, Brass.....75@75&10%

Chalk—

White, case lots, ₩ gr 50¢; small lots 55 @55¢
Red, case lots...₩ gr 67¢; small lots 77 @78¢
Blue, case lots...₩ gr 75¢; small lots 85¢
See also Crayons.

Chalk Lines—See Lines.

Chisels—

Socket Framing and Firmer.

P. S. & W.	
New Haven	
Witherby	..75 @ 75&10 %
Mix	
Ohio Tool Co	
Douglass	..75@75&5%
Buck Bros.	..30%
Merrill	..60&10@60&10&5%
L. & I. J. White	..30@30&5%

Tanged and Miscellaneous.

Tanged Firmers.....40&10@50%
Butchers'.....$4.75@$5.00
Spear & Jackson's.....$5 to $
Buck Bros.....30%
Cold Chisels, ₩ ℔.....15@16%

Chucks—

Beach Pat.....each, $8.00.....30%
Morse's Adjustable, each, $7.00, 20@20&5%
Danbury.....each, $6.00, 30@30&5%
Syracuse, Bals Pat.....25%
Graham Patent.....33⅓%
Skinner's Patent Chucks.
Combination Lathe Chucks.....33⅓%
Universal Lathe Chucks.....40%
Independent Lathe Chucks.....40%
Drill Chucks.....15%
Union Mfg. Co.,
Victor.....$8.50, 25%
Combination.....40%
Universal.....40%
Independent.....40%

Churns.

Tilton Union, each, 5 gal. $3.25; 7 gal. $3.75; 10 gal..$4.25.
McDermaid Star Barrel Churn, each 6 gal., $2.60; 10 gal., $2.75 15 gal. $3.00 20 gal., $3 75.

Clamps—
B. I. Tool Co.'s Wrought Iron....25%
Adjustable, Cincinnati....15&10%
Adjustable, Hammers....10%
Adjustable, Stearn's....30&30&10%
Adjustable, Stearn's Adjustable Cabinet and Corner....30&30&10%
Cabinet, Sargent's....60&10%
Carriage Makers', Sargent's....70&10%
Carriage Makers', P., S. & W. Co....40&10%
Carriage Makers', P., S. & W. Co....40&5&40&10%
Eberhard Mfg. Co....40&10&40&10&5%
Warner's....40&10&40&10&5%
Saw Clamps, see Vises, Saw Filers'.
Carpenters', Cincinnati....25&10%

Cleavers.
Butchers'.
Bradley's....25@30%
L. & I. J. White....30&5%
Beatty's....40@40&5%
New Haven Edge Tool Co.'s....40%
P., S. & W....33⅓&5@33⅓&10%
Foster Bros....30%
Schulte, Lobeck & Co....40@40&5%

Clips—
Norway, Axle, ¼ & 5-16....55&5&5%
2nd grade Norway Axle, ¼ & 5-16, 65&5%
Superior Axle Clips....60%&5&70%
Norway Spring Bar Clips, 5-16....20&5&5%
Wrought-Iron Felloe Clips....₩ lb, 5½¢
Steel Felloe Clips....₩ lb, 6¢
Saker Axle Clips....25%

Cloth and Netting, Wire—See Wire, &c.

Cockeyes....50%

Cocks, Brass.
Hardware list....50&2%

Coffee Mills—See Mills, Coffee

Collars, Dog, &c.
Medford Fancy Goods Co....40&10%
Embossed, Gilt, Pope & Steven's list....30&10%
Leather, Pope & Steven's list....40%
Brass, Pope & Steven's list....40%
Chapman Mfg. Company....50&10@60%

Combs, Curry.
Fitch's....50&10@50&10&10%
Rubber, per doz $10.00....20%
American Curry Comb Co...New prices in preparation.

Compasses, Dividers, &c.—
Compasses, Calipers, Dividers.70@70&10%
Bemis & Call Co.'s
Dividers....60&5%
Compasses & Calipers....50&5%
Wing and Inside or Outside....50&5%
Double....60%
(Call's Pat. Inside)....30%
Excelsior....50%
J. Stevens & Co.'s....25&10%
Starrett's
Spring Calipers and Dividers....25&10%
Lock Calipers and Dividers....25%
Combination Dividers....25%

Coopers' Tools—See Tools, Coopers'.

Cord—
Sash.
Common....₩ lb, 10¢ @ 11¢
Patent, good quality....₩ lb, 12 @ 12¢
White Cotton Braided, fair.₩ lb, 24¢@25¢
Common Russia Sash....₩ lb, 12½@13¢
Patent Russia Sash....₩ lb, 14¢
Cable Laid Italian Sash....₩ lb, 21@22¢
India Cable Laid Sash....₩ lb, 12¢
Silver Lace—
A Quality, White, 50¢....25%
A Quality, Drab, 55¢....25%
B Quality, White, 30¢....10%
B Quality, Drab, 35¢....10%
Sylvan Spring. Extra Braided White,34¢
Sylvan Spring, Extra Braided, Drab..30¢
Semper Idem, Braided, White....30¢
Egyptian, India Hemp, Braided....26¢
Massachusetts, White....26¢
Samson—
Braided, White Cotton, 50¢..30@30&5%
Braided, Drab Cotton, 55¢..30@30&5%
Braided, Italian Hemp, 55¢..30@30&5%
Braided, Linen, 80¢....30@30&5%
Tate's Cotton Braided, White.₩ lb, 28¢.10%
Wire Picture.
Braided or Twisted....75&10%

Corkscrews—See Screws, Cork.

Corn Knives and Cutters—See Knives, Corn.

Crackers, Nut—
Table (H. & B. Mfg. Co.)....40%
Blake's Pattern....₩ doz $2.00, 10%
Turner & Seymour Mfg. Co....50%

Cradles—
Grain....50&5&2@50&10&2%

Crayons.
White Crayons, ₩ gross....10¢
D. M. Stewart Mfg. Co., Metal Workers, ₩ gr, $2.50....25%
D. M. Stewart Mfg. Co., Rolling Mill, ₩ gr, $2.50....25%
See also Chalk.

Crow Bars—See Bars, Crow.

Curry Combs—See Combs, Curry.

Curtain Pins—See Pins Curtain.

Cutters—
Meat.
Dixon's ₩ doz....40&5%

Nos.	1	2	3	4
	$14.00	$17.00	$19.00	$30.00

Woodruff's ₩ doz....40&5%

Nos.	100	150
	$15.00	$18.00

Hales Pattern ₩ doz....70@70&5%

Nos.	11	12	13
	$27.00	$33.00	$45.00

American....30%

Nos.	1	2	3	4	5
Each	$5	$7	$10	$25	$50

Enterprise....30%

Nos.	10	12	22	32	42
Each	$3	$3.50	$4	$6	$15

Great American Meat Cutter....30%

Nos.	112	116	118	120	122
Each	$2.00	$2.75	$3.00	$3.50	$4.00

Miles' Challenge ₩ doz....45@45&10%

Nos.	1	2	3
	$22.00	$30.00	$40.00

Home No. ₩ doz $26.00, 55&10%

Draw Cut, each:

Nos.	5	2	6	8
	$50	$75	$80	$225

....20@25%
Beef Shavers (Enterprise)....20&10@30%
Little Giant (P. S. & W. Co.)....50%
Chadborn's Smoked Beef Cutter, ₩ doz $66.00

Tobacco.
Champion....20&10@30%
All Iron....₩ doz $4.25
Nashua Lock Co.'s..₩ doz, $18.00 50@55%
Wilson's....55%
Sargents's....₩ doz, $24, 55&10%
Acme....₩ doz $30.00, 40%

Washer.
Smith's Pat....₩ doz $12.00, 20&10&10%
Johnson's....₩ doz $11.00, 33⅓%
Penny's.₩ doz Pol. $14; Jap'd, $16.00, 55%
Appleton's....₩ doz $16.00, 60&10%
Bonney's....30&10%
Cincinnati....35&10%

Dampers, &c—

Dampers, Buffalo....40&10%
Buffalo Damper Clips....40&10%
Crown Damper....40%
Excelsior....40&10%

Diggers, Post Hole, &c.—
Samson Post Hole Digger, ₩ doz $36.00, 25%
Fletcher Post Hole Augers, ₩ doz $36, 20%
Eureka Diggers....₩ doz $12.50@14.00
Leed's....₩ doz $8.00@9.00
Vaughan's Post Hole Auger, ₩ doz $13.00@14.00
Kohler's Little Giant....₩ doz. $18.00
Kohler's Hercules....₩ doz. $6.00
Kohler' New Champion....₩ doz. $9.00
Schniedler....₩ doz. $18.00
Ryan's Post Hole Diggers..₩ doz $24.00
Cronk's Post Bars, ₩ doz $60.00, 50&5@50&10%
Gibbs Post Hole Digger....₩ doz $15.00
Imperial....₩ doz $7.50

Dividers—
See Compasses.

Dog Collars—See Collars, Dog, &c.

Door Springs—See Springs, Door.

Drawers.
Money, ₩ doz....$18&20

Drawing Knives—See Knives, Drawing.

Drills and Drill Stocks—
Blacksmiths'....each $1.75
Blacksmiths' Self-Feeding, each $7.50,30%
Breast, P. S. & W....40&10%
Breast, Wilson's....30&5%
Breast, Millers Falls....each $3.00, 25%
Breast, Bartholomew's....each $3.50, 25&10@40%
Ratchet, Merrill's....20@20&5%
Ratchet, Ingersoll s....25%
Ratchet, Parker's....30@20&5
Ratchet, Whitney's....20&10%
Retchet, Weston's....20@25%
Ratchet, Moore's Triple Action...35@30%
Ratchet, Curtis & Curtis....30%
Whitney's Hand Drill, Plain, $11.00; Adjustable, $13.00....30&10%
Wilson's Drill Stocks....10%
Automatic Boring Tools....$1.75@$1.85
Twist Drills—
Cleveland....50&10&5%
Diamond, W. & B....50&10&5%
Graham's Pat. Groove Shank 50&10&5%
Morse....50&10&5%
New Process....50&10&5%
Standard....50&10&5%
Syracuse (Metal list)....50&10%

Drill Bits or Bit Stock Drills—
See Augers and Bits.

Drill Chucks.—See Chucks.

Dripping Pans-See Pans, Dripping.

Drivers, Screw.
Douglas Mfg. Co....30@20&10%
Disston's....50%
Buck Bros....30%
Stanley R. & L. Co.'s
Varnished Handles, No. 64....60&10%
No. 86....70&10%
Sargent & Co.'s
No. 1 Forged Blade....60&10&10%
Nos. 20, 30 and 50....60%&10&10%
P. S. & W....70 %
Knapp & Cowles:
No. 1....60&20@70%
No. 2....60&10&10@70&5%
No. 3....60&5@60&10%
Nos. 4 and 00, Acme and Ideal..50& 5@50&10&5%
Stearns'....25&10&5%
Gay & Parsons....35%
Champion....25&10%
Clark's Pat....30@33⅓%
Crawford's Adjustable....30%
Ellrich's Socket and Ratchet..25@35&10%
Allard's Spiral, new list....25%
Kolb's Common Sense ₩ doz $6.00,35&10%
Syracuse Screw-Driver Bits...30&30&5%
Screw-Driver Bits....₩ doz. 50@75¢
Screw-Driver Bits, Parr's....₩ gro $6.25
Fray's Hol. Hdle. Sets. No. 2, $12.00, 25@25&10%
P. D. & Co.'s all Steel....50%
Cincinnati....35&10%
Brace Screw Drivers....25&10%
Buck Bros.' Screw-Driver Bits....

Egg Beaters.—See Beaters, Egg.

Egg Poachers.—See Poachers, Egg.

Electric Bell Sets.—See Bells, Electric.

Emery. — No. 4 to No. 54 to Flour, CF

	46 gr.	150 gr.	F. FF.
Kegs, ₩ lb	4½¢	5 ¢	2½¢
½ kegs, ₩ lb	4¾¢	5½¢	2¾¢
¼ kegs, ₩ lb	5 ¢	5½¢	3 ¢
10-lb cans, 10 in case	6 ¢	6½¢	5 ¢
10-lb cans, less than 10	10 ¢	10 ¢	

Enameled and Tinned Ware See Ware, Hollow.

Escutcheon Pins—See Pins, Escutcheon.

Escutcheons.
Door Lock....Same dis as Door Locks.
Brass Thread....60@60&10%
Wood....20%

Expanded Metal.
List No. 5.
Lathing....10%
Fencing, Painted Sheets....20%
Netting, Painted Sheets....20%
Door Mats, Galvanized....25%
Window Guards, Paneled....15%
Tree Guards, Paneled....15%

Extractors, Lemon Juice—See Squeezers, Lemon.

Fasteners, Blind—

Mackrell's, ₩ dos. $1.00....20@20&10%
Van Sand's Screw Pat..$15 ₩ gr..60&10%
Van Sand's Old Pat., $15.00 ₩ gr..55&10%
Austin & Eddy No. 2008 ₩ gr....$9.00
Security Gravity, ₩ gr....$9.00
Zimmerman's....45 %

Faucets,—
Fenn's....40%
Bohren's Pat. Rubber Ball....25%
Fenn's Cork Stops....33⅓%
Star....60%
Frary's Pat. Petroleum....40&5&3%
B. & L. B. Co.
West's Lock, Open and Shut Key...50%
Star, Metal Plug, new list....40%
Lockport, Metal Plug, reduced list..60%
Metallic Key, Leather Lined....60&10@ 60&10&10%
Cork Lined....70&5@70&10%
Burnside's Red Cedar....50%
Burnside's Red Cedar, bbl lots....50&10%
John Sommers'
Peerless Best Block Tin Key....40%
IXL, 1st quality, Cork Lined....50%
Diamond Lock....40%
Perfection, Fla. Red Cedar....50%
Goodenough Cedar....50%
Boss Metallic Key....50%
Reliable Cork Lined....60%
Western Pattern Cork Lined....50%
Self-Measuring
Enterprise, ₩ dos $36.00....30&10%
Lane's, ₩ dos $36.00....25&10%
Victor, ₩ dos $36.00....25&10%

Felloe Plates—See Plates, Felloe.

Fifth Wheels.—
Derby and Cincinnati....45&5%
Brewster....50&5%

Files—
Domestic—
Nicholson Files, Rasps, &c....60&10@60&10&5%
Nicholson (X. F.) Files....25%
Nicholson's Royal Files (Seconds)....75% (extra prices on certain sizes)
G. & H. Barnett (Black Diamond)....60&10@60&10&5%
Eagle....60&10&5@60&10&10%
Other makers, best brands60&10@60&20%
Fair brands....60&10&10@70&5%
Second quality....70&10@75&10%
Heller's Horse Rasps....50&7½@50&10%
McCaffrey's Horse Rasps....50&10%
Chesea Horse Rasps, Hand Cut...50&10%
Imported—
Butcher....Butcher's list, 20%
Stubs....Stubs list, 25@30%

Fixtures.
Grindstone—
Sargent's Patent....70&10%
Reading Hardware Co....30&10%
P., S. & W. Co....50&10%

Fluting Machines—See Machines, Fluting.

Fluting Scissors—See Scissors, Fluting.

Fodder Squeezers—See Squeezers, Fodder.

Forks—
Hay, Manure, &c., Asso List.65&5@65&10%
Hay, Manure, &c., Phila. List. 60@60&5%
Plated, see Spoons.

Frames—
Saw—
White Vermont....₩ gro $9.00@10.00
Red, Polished and Varnished....₩ dos $1.50, 25%
Screen, Window and Door—
Porter's Pat. Window and Door Frame. 33⅓&10%
Warner's Screen Corner Irons...33⅓@ 33⅓&10%
Stearns' Frames and Corners..25@25&10%
Cortland....40@40&5%

Freezers, Ice Cream—
White Mountain....60@60&5%
Granite State....65@65&5%
Arctic....70@70&5%
American....60%
Buffalo Champion....65@65&5%
Shepard's Lightning....65@65&5%
Gem....65%
Blizzard....70%
Double Action Crown....60%
Crown....60%
Star....60%
Peerless....60&10%
Giant....60%
Zero....60&10&10%
Boss and Pet....60&10&10&10%
Keystone, P. D. & Co., each $1.50....20%

Fruit and Jelly Presses—See Presses, Fruit and Jelly.

Fry Pans—See Pans, Fry.

Funnels.
Gersdorff's Perfection, Standard and Globe; Tin, 1 gro., 10 %; 2 to 5 gro., 20 %; 5 to 10 gro....30 %
Copper, 1 to 6 doz., 15 %; 6 to 12 doz., 20 %; over 12 doz....25 %

Furnaces, Soldering.
Burgess No. 3 Gem, tin reservoir....$7.00
Burgess No. Gem, copper reservoir, 8.50

Fuse—Dis. 12½%. ₩ 1000 ft
Common Hemp Fuse, for dry ground.$3.70
Common Cotton Fuse, for dry ground 2.30
Single Taped Fuse, for wet ground.. 3.30
Double Taped Fuse, for very wet gr.. 4.15
Triple Taped Fuse, for very wet gr.. 5.60
Small Gutta Percha Fuse, for water.. 7.50
Large Gutta Percha Fuse, for water.12.00

Gates, Molasses—

Stebbin's Pattern....30@30&5%
Stebbin's Genuine....40@40&10%
Stebbin's Tinned Ends....40@40&10%
Chase's Hard Metal....50&10%
Bush's....30%
Lincoln's Pattern....70@70&10%
Weed's....30&10%
Bags, ₩ doz:
No. 1, $7; No. 2, $8; No. 3, $9; No. 4, $10....60&10&10%

Gauges.
Marking, Mortise, &c....30&10%
Starrett's Surface, Center and Scratch....20&10%
Stanley R. & L. Co.'s Butt and Rabbet Gauge....20&10%
Wire, Wheeler, Madden & Co....40%
Wire, Morse's....25%
Wire, Brown & Sharpe's....10@20%
Wire, P. S. & W. Co....10&15

Gimlets—
Nail and Spike....30&10@35%
"Eureka" Gimlets....40&10%
"Diamond" Gimlets....₩ gr $5.00
Double Cut, Shepardson's....45@45&5%
Double Cut, Ives'....60@60&5%
Double Cut, Douglass'....40&10%
"Bee," ₩ gr $12....35@35&5%

Glue—
Le Page's Liquid....25@25&5%
Upton's Liquid....35%
Improved Process....35%
Dodd's Liquid Glue....25@25&5%

Glue Pots—See Pots, Glue.

Grease, Axle.
Fraser's....Keg ₩ lb 4¢, Pail ₩ lb 5¢
Fraser's, in boxes....₩ gr $9.50
Dixon's Everlasting, in bxs....₩ doz 1 lb $1.20; 2 lb $2.00
Dixon's Everlasting....10-lb palls, ea. 35¢
Lower grades, special brands, ₩ gr $5.50@$7.00

Grindstones—
Small, at factory....₩ ton $7.50@8 0
Family, regular list....60%
Family, Cleveland Stone Co....20 %

Grindstone Fixtures—See Fixtures Grindstone.

Hack Saws—See Saws.

Hafts, Awl.
Sewing, Brass Fer.₩ gr, $3.50....45&10%
Pat. Sewing, Short.$1.00 ₩ doz....40&10%
Pat. Sewing, Long....₩ doz $1.20
Pat. Peg, Plain Top.₩ gr $10.00....45&10%
Pat. Peg, Leather Top.₩ gr $12.00.45&10%

Halters.
Covert's, Rope, Jute....60&10&10&2%
Covert's, Rope, 7-16-in., Jute....70&2%
Covert's, Rope, ½-in. Hemp....50&2%
Covert's Adj. Rope Halters....40&2%
Covert's Hemp Horse and Cattle Tie....50&2%
Covert's Jute Horse Ties....70&2%
Covert's Jute Cattle Ties....70&10&2%
Covert's Adj. Web Halters....35&5&2%

Hammers—
Handled Hammers—
Maydole's, list Dec. 1, '85....25&10@35% }
Buffalo Hammer Co.... }
Humason & Beckley.... } 50@50&10%
Atha Tool Co.... }
Verree.... }
C. Hammond & Son....40&10@—%
Fayette R. Plumb.
Artisans' Choice, A. E. Nail....40&12½%
Regular Y. & P., A. E. Nail....30%
Horseshoe Turning Hammers....50%
Other Hammers....50&10%
Cheney's Claw....40&10%
Cheney's Machinist's & Riveting..50&5%
Hartford, Nail Hammers....40&5%
Hartford, Machinists, &c...50&5@50&10%
Magnetic Tack, Nos. 1, 2, 3, $1.35, 1.50 & 1.75....30&10%
Nelson Tool Works....40&10%
Warner & Nobles....20@35
Peck, Stow & Wilcox....40%
Sargent's....33⅓&10%
Heavy Hammers and Sledges—
3 lb and under....₩ lb 40¢ }
3 to 5 lb....₩ lb 36¢ } 70@70&10%
Over 5 lb....₩ lb 30¢ }
Wilkinson's Smiths....10½@11¢₩ lb

Handcuffs and Leg Irons—See Police Goods,

Handles—
Cross-Cut Saw Handles—
Atkins' No. 1 Loop, ₩ pair, 25¢; No. 2 12½¢; No. 6, 16¢; No. 2 and No. 4 Reversible, 18¢.
Champion....18¢
Iron, Wrought or Cast—
Door or Thumb.

Nos.	0	1	2	3	4
Per doz.	$0.90	1.00	1.10	1.35	1.50

....80&10&
Boggin's Latches....₩ doz 30@33
Bronze Iron Drop Latches..₩ doz 70¢ net
Jap'd Store Door Handles—Nuts, $1.62
Plate, $1.10 ; no Plate, $0.85....net
Barn Door, ₩ doz $1.40....10&10%
Chest and Lifting....70%
Wood—
Saw and Plane....40&10@40&10&5%
Hammer, Hatchet, Axe, &c....40@40&5%
Brad Awl....₩ gr $2.00
Hickory Firmer Chisel, ass'd..₩ gr 4.50
Hickory Firmer Chisel, large..₩ gr 5.00
Apple Firmer Chisel, ass'd...₩ gr 5.00
Apple Firmer Chisel, large...₩ gr 6.00
Socket Firmer Chisel, ass'd...₩ gr 3.00
Socket Framing Chisel, ass'd..₩ gr 5.00
I. B. Smith & Co.'s Pat file....50%
File, assorted....₩ gr 2.75 }
Auger, assorted....₩ gr 5.00 } 40&10@50%
Auger, large....₩ gr 7.00 }
Pat. Auger, Ives'....30&10%
Pat. Auger, Douglass....₩ set $1.25
Pat. Auger, Swan's....₩ set $1.00
Hoe Rake, Shovel, &c....50&10%

Hangers

Barn Door, old patterns...60&10&10@70%
Barn Door, New England...60&10&10@70
Samson Steel Anti-Friction.....55%
Orleans Steel.....55%
Hamilton Wrought Wood Track.....55%
U. S. Wood Track.....65%
Champion.....60&10%
Rider and Wooster, Medina Mfg. Co.'s list.....70%
Climax Anti-Friction.....55%
Climax Anti-Friction for Wood Track55%
Zenith for Wood Track.....55%
Reed's Steel Arm.....50%
Challenge, Barn Door.....50%
Sterling.....50@50&10%
Victor, No. 1, $15.00; No. 2, $16.50; No. 3, $18.00.....50&2%
Cheritree.....50&10%
Kidder's.....50&10@60%
Boss.....60&10%
Best Anti-Friction.....60&10%
Duplex (Wood Track).....60&10&5%
Terry's Pat., ₩ dos pr. 4 in, $10.00; 5 in. $12.00.....50&10%
Terry's Steel Anti-Friction Leader 50&10%
Terry's Steel Anti-Friction Ideal..50&10%
Cronk's Patent, Steel Covered.....50@5%
Wood Track Iron Clad, ₩ ft. 10¢.....50 &15@60%
Carrier Steel Anti-Friction.....50&10%
Architect, ₩ set $6.00.....20%
Bellpac.....20&10%
Felix, ₩ set $4.50.....20%
Richards'.....30@20&10%
Lane's Standard.....50&5@50&10%
Lane's New Standard.....50@50&5%
Lane's Parlor.....40%
Ball Bearing Door Hanger..20&10@25&10%
Warner's Pat.....20&10@20&10&10%
Stearns' Anti-Friction.20&10@20&10&10%
Stearns' Challenge.....25&10@25&10&10%
Faultless.....40@40&5%
American, ₩ set $6.00.....20&10%
Rider & Wooster, No. 1, 62½¢; No. 2, 75¢.....40%
Paragon, Nos. 1, 2 and 3.....40&10%
Cincinnati.....25&10%
Paragon, Nos. 5, 5¼, 7 and 8.....20&10%
Crescent.....60@60&10%
Nickel Cast Iron.....50%
Nickel, Malleable Iron and Steel.....40%
Scranton Anti-Friction Single Strap33⅓&%
Wild West, 4 in. Wheel, $15.00; 5 in. Wheel, $21.00.....45%
Star.....40&10@40&10&5%
May.....50&5@50&10%
Barry, $6.00.....40&10%
Interstate.....50%
Magic.....45%
Pendulum, Payson's.....40%

Harness Snaps—See Snaps.

Hatchets—

American Axe and Tool Co.
Blood's
Hunt's
Hurd's
Mann's
Peck's
Underhill's
} 40 & 10
Buffalo Hammer Co. @
Fayette R. Plumb
C. Hammond & Son
Kelly's
Sargent & Co.
P., S. & W. Co.
} 50&5 %
Ten Eyck Edge Tool Co.
Collins.....10%
Schulte, Lohoff & Co.....50@50&5%

Hay and Straw Knives—See Knives.

Hinges—

Blind Hinges—

Parker.....75&2%
Huffer.....50%
Clark's, Nos. 1, 3, 5, 40 and 50 75&10&5@80%
Clark's Mortise Gravity.....50%
Sargent's Nos. 1, 3, 5, 11, 13 75&10@55&10&5%
Sargent's, No. 12.....77&10&10%
Reading's Gravity.....75&10@75&10&5%
Shepard's
Noiseless.....75&10%
Niagara.....80%
Buffalo.....80%
Clark's Genuine Pattern.....80%
O. S., Lull & Porter.....75&10%
Acme, Lull & Porter.....75%
Queen City Reversible....70&10&5@75%
Clark's Lull & Porter, Nos. 0, 1, 1½, 2, 2½, 3.....75&10&2½%
North's Automatic Blind Fixtures, No. 2, for Wood, $9.00; No. 3, for Brick, $11.50.....10%

Gate Hinges—

Western.....₩ dos $4.40, 60%
N. E.....₩ dos $7.00, 55%
N. E. Reversible.....₩ dos $5.20, 55&10%
Clark's, Nos. 1, 2, 3.....60&10&5%
N. Y. State.....₩ dos $5.00, 55&10%
Automatic.....₩ dos $12.50, 50%
Shepard's.....60&10&5%

Spring Hinges—

Geer's Spring and Blank Butts.....40%
Union Spring Hinge Co.'s list, March 1886.....2 %
Barker's Double Acting.....25%
Union Mfg. Co.....25%
Bommer's.....30%
Buckman's.....15@20%
Chicago.....30%
Bardsley's Patent.....40%
Acme.....30%
U. S.....25&10%
Empire and Crown.....20%
Hero and Monarch.....55%
American, Gem, and Star.....20%
Oxford.....20%
Wiles'.....10%
Devore's.....40%
Rex.....40%
Royal.....60%
Reliable.....60%
Champion.....60%
Stearn's.....50&10%
Samson, ₩ gross.....$14.00

Extra 5@10 % often given.

Wrought Iron Hinges.

List February 14, 1891.
Strap and T.....50&10%
Corrugated Strap & T.....50@50&10%
Screw Hook and Strap. { 6 to 12 in., ₩ D. 4¢ / 14 to 20 in., ₩ D. 3½¢ / 22 to 36 in., ₩ D. 3¢
Screw Hook and Eye. { ⅛ in., ₩ D 7½¢ / ¼ in., ₩ D 5½¢ / ⅜ in., ₩ D 4½¢
Rolled Blind Hinges, Nos. 33 and 34 50&10%
Rolled Blind Hinges, Nos. 232 and 234 55&10%
Rolled Plate.....70&10%
Rolled Raised.....70&10%
Plate Hinges ("Providence") { 8, 10 & 12 in., ₩ D.....5¢ / over 12 in., ₩ D.....4¢

Hoes—

Eye—

D. & H. Scovil.....30%
Lane's Crescent Planters Pattern..45&5%
Lane's Razor Blade, Scovil Pattern...30%
Maynard, S. & O. Pat.....45&5%
Sandusky Tool Co., S. & O. Pat. }
Am. Axe and Tool Co., S. & O. Pat. }
Chattanooga Tool Co., S. & O. Pat..60& 5@60&10%
Grub.....60&10%

Handled—

Garden, Mortar, &c.....70%
Planter's, Cotton &c.....70%
Warren Hoe.....60%
Magic.....₩ dos $4.00

Hog Rings and Ringers—See Rings and Ringers.

Hoisting Apparatus—See Machines, Hoisting.

Hollow-Ware—See Ware, Hollow.

Holders.

Bag.

Sprengle's Pat.....₩ dos $18.....60%

Bit.

Extension,
Barber's, ₩ dos $15.00.....40@40&10%
Ives, ₩ dos $30.00.....60&5@60&10%
Diagonal.....₩ dos $24.00, 40%
Angular.....₩ dos $24.00, 40&5%

File and Tool—

Bals Pat.....₩ dos $4.00; 25%
Nicholson File Holders.....20%
Dick's Tool Holder.....20%

Hooks—

Cast Iron—

Bird Cage, Sargent's list.....
Bird Cage, Reading.....
Clothes Line, Sargent's list..
Clothes Line, Reading list. } 60&10&10%

60&10@60&10&10%
Ceiling Sargent's list.....55&10&10%
Harness, Reading list..55&10@55&10&10%
Coat and Hat, Sargent's list. 55&10@60&10%
Coat and Hat, Reading .50&10@50&10&10%

Wrought Iron—

Cotton.....₩ dos $1.25
Cotton Pat. (N.Y. Mallet & Handle W'ks). 30%
Tassel and Picture (T. & S. Mfg. Co.)...50%
Wrought Staples, Hooks, &c. See Wrought Goods.

Wire—

Wire Coat and Hat, Gem, list April, 1886.....60@60&10%
Wire Coat and Hat, Miles, list April, 1886.....50@50&10%
Indestructible Coat and Hat...45@45&5%
Wire Coat and Hat, Standard.60@60&10%
Handy Hat and Coat.....50&10@60%
Steady Ceiling Hooks.....50&10@60%
Belt.....80@80&10%
Atlas, Coat and Hat.....60@60&10%
Bright Wire Goods, see *Wire.*

Miscellaneous.

Grass, No. 2, $2.00; No. 3, $2.25; No. 4, $2.50
Nolin's Grass.....₩ dos $2.25
Bush.....55@60%
Whiffletree—Patent.....55%
Hooks and Eyes—Malleable Iron. 70@70&10%
Hooks and Eyes—Brass.....60@60&10%
Fish Hooks, American.....50%
Bench Hooks.....See Bench Stops.

Horse Nails—See Nails, Horse.

Horse Shoes—See Shoes, Horse.

Hose, Rubber—

Competition.....75@75&5%
Standard.....60&10&5@60&10&10%
Extra.....50&10@60%
N. Y. R. & P. Co., Para.....25&5%
N. Y. R. & P. Co., Extra.....40@40&5%
N. Y. R. & P. Co., Dundee....50&10 @ 60%

Huskers—

Blair's Adjustable.....₩ gr $8.00
Blair's Adjustable Clipper....₩ gr 7.00
Hubbard's Solid Steel.....₩ gr 4.50

Indurated Fiber-Ware—See Ware, Indurated Fiber.—

Irons.

Sad—

From 4 to 10, at factory....₩ 100 lb. $2.30@$2.40
Self-Heating.....₩ dos $9.00 net
Self-Heating, Tailors'....₩ dos $18.00 net
Mrs. Pott's Irons.....60@60&10%
Enterprise Star Irons.....60@60&10%
XX Cold Handle Sad Iron.....50&5@60%
Ideal Irons new list.50&10@50 & 10&10%
Salamander, Irons.....25%
B. B. Sad Irons, ₩ lb.....3 @3½¢
Combined Fluter and Sad Iron, ₩ dos, $15.00.....15%
Fox Reversible, Self-Fluter ₩ dos $24.00
Chinese Laundry (N.E. Butt Co.) 8½¢, 15%
New England.....5¢, 15%
Mahony's Troy Pol. Irons.....25%
Sensible, list Jan. 91.....50&10&5%
Sensible Tailor's Irons.....33⅓ %
National Self-Heating.....30 %

Soldering—

Soldering Coppers.....₩ lb 19 @ 21¢
Covert's Adjustable, list Jan. 1 1886. 35&2%

Irons, Pinking, per dos., 65¢.

Jack Screws—See Screws.

Jacks, Wagon.

Daisy.....40%
Victor.....40%
Lockport.....40%

Kettles—

Brass, Spun, Plain, list Jan. 1, '91..25&5%
Brass, Spun, Pld. W.M. list Jan. 1, '91.20%
Enameled and Tea—See Hollow Ware.

Keys—

Lock Asso'n list Dec. 30, 1886...50&10@ 60&5%
Eagle, Cabinet, &c.....33⅓&2%
Hotchkiss' Brass Blanks.....40%
Hotchkiss, Copper and Tinned.....40%
Hotchkiss' Pad. and Cab.....35%
Ratchet Bed Keys.....₩ dos $4.00, 15%
Wollensak Tinned.....50&10%

Knife Sharpeners—See Sharpeners, Knife.

Knives.

Butcher, Shoe, &c—

Wilson s Butcher Knives, List Dec. 8, 1890.....25%
Ames' Butcher Knives.....25%
Foster Bros.' Butcher, &c.....40%
Jordan's AAA1, Butchers', list.....net
Nichols' Butcher Knives.....40&10%
W. W. Wilson, Butcher, 6 in., $2.00; 7 in., $2.70; 8 in., $3.80, &c.
Ames' Shoe Knives.....20@25%
Ames' Bread Knives, ₩ dos $1.80, 15@20%
Moran's Shoe and Bread.....20%
Hay and Straw.....See Hay Knives.
Table and Pocket.....See Cutlery.
Corn, Auburn Mfg. Co. Western Pat., $2.00
Corn, Auburn Mfg. Co. Crescent....$3.50

Corn—

Bradley's.....10%
Wadsworth's.....25%

Drawing—

Witherby
P. S. & W.
Mix
New Haven
Merrill
} ..75@75&10%
Douglas.....75@75&5%
Warrous.....15&10@25%
L. & I. J. White.....20&5%
Bradley's.....35%
Adjustable Handle.....25@33⅓%
Wilkinson's Folding.....25@25&5%

Hay and Straw—

Lightning, from jobbers....$8.00 @ $9.00
Wadsworth's.....40&7½@40&10%
Carter's Needle.....₩ dos $11.00@$11.50
Heath's.....₩ dos $13.00@13.50
Auburn Hay, Com. and Spear Point..50%
Auburn, Straw.....40%
Nolin's Hay.....₩ dos.$7.00 @ $8.00

Mincing.

Am. (3d quality), ₩ gr., 1 blade, $7; 2 blades, $12; 3 blades, $18.....net
Lothrop's.....20&10%
Smith's, ₩ dos, Single, $2.00; Double, $3 40@45%
Knapp & Cowles.....50&10@60%
Buffalo Adjustable.....₩ dos $3.00 ,25%
Buffalo Double Adj'table.₩ dos $3.00 25%

Knobs—

Door Mineral.....60@65%
Door Por. Jap'd.....70@75%
Door Por. Nickel.....$2.00@2.25
Door Por. Plated, Nickel.....$2.00@2.25
Drawer, Porcelain.....60&10@60&10&10%
Hemacite Door Knobs.....40&10@50%
Yale & Towne Wood, list Dec., 1885...40%
Furniture. Plain.....75¢ gro inch, 10%
Furniture, Wood Screws.....25&10%
Base, Rubber Tip.....70&10&5%
Picture, Judd's.....60&10&10@70%
Picture, Sargent's.....70&10%
Picture, Hemacite.....35&5%
Shutter, Porcelain.....65&10%
Carriage, Jap.....₩ gro 30¢, 60&10%
Bardsley's Wood Door, Shutter, &c..40%

Ladies'—

Melting, Sargent's.....55&10%
Melting, Reading.....55&10%
Melting, Monroe's Pat...₩ dos $4.00, 40%
Melting, P. S. & W.....35&10@40%
Melting, Warner's.....30%

Lanterns—

Tubular—

Plain with Guards, ₩ dos.....$3.75@4.00
Lift Wire, with Guards.....$4.00@4.25
Square Plain, with Guards....$3.75@4.00
Sq. Lift Wire, with Guards.....$4.50

Police Lanterns (including packages).

2¾-inch Bull's-eye Police regular..... ₩ dos $3.60
3-inch Bull's-eye Police regular..... ₩ dos $3.90
2¾-inch Bull's-eye Police flash light.... ₩ dos $4.00
3-inch Bull's-eye Police flash light..... ₩ dos $4.50

Lawn Mowers—See Mowers, Lawn.

Leaders, Cattle.

Humason. Beckley & Co.'s.....70%
Sargent's.....60%&10%
Hotchkiss.....30%
Peck, Stow & W. Co.....60&10%

Lemon Squeezers—See Squeezers, Lemon.

Lifters, Transom.

Wollensak's:
Class 3 and 4, Bronzed Iron.....50%
Class 3 and 4, Bronze Metal.....25%
Class 3 and 4, Brass.....35%
Skylight Lifters.....35%
Crown, Eagle and Shield.....50%
Reiher's, list Feb. 20, 1891.
Bronzed Iron Rods.....50&10&10&2%
Brass, Real Bronze or Nickel Plate..30%
Excelsior.....50&10&2 %
Shaw's.....50&10%
Payson's:
Universal.....60%
Solid Grip.....60&10%
Imperial.....50&10%

Lines—

Cotton and Linen Fish, Draper's.....50%
Draper's and Tate's Chalk.....60%
Draper's Masons' Linen, 84 ft., No. 1, $1.25; No. 2, $1.75; No. 3, $2.25; No. 4, $2.75; No. 5, $3.25.....25%
Cotton Chalk.....55%
Samson Cotton, No. 4, $2; No. 4½, $2.50; No. 5, $3.....10%
Silver Lake, Braided, No. 0, $6.00; No. 1, $6.50; No. 2, $7.00; No. 3, $7.50 ₩ gro.....25%
Mason's Linen, No. 3½, $1.50; No. 4, $2.00; No. 4½, $2.50.
Mason's Colored Cotton.....45%
Wire Clothes.. Nos. 100 ft. 1 $3.50, 2 $3.00, 3 $2.50
Ventilator Cord, Samson Braided White or Drab Cotton..₩ dos $7.50, 30%

Links, Open.

Terry's—per gro.:

Nos.	1	2	3	4
	$6.00	8.00	12.00	16.00

Locks, &c.—

Cabinet—

Eagle, Gaylord Parker and Corbin... } List March, '84, rev Jan. 1, '85...35%&10%
Deitz, Nos. 36 to 39.....40%
Deitz, Nos. 51 to 63.....40%
Deitz, Nos. 86 to 96.....40&10%
Stoddard Lock Co.....30%
"Champion" Night Latches.....30&3%
Barnes Mfg. Co.....40&10%
Eagle and Corbin Trunk.....40&10%
"Champion" Cab. and Combin...33⅓%
Yale.....net prices
Romer's.....35%

Door Locks, Latches, &c.

R. & E. Mfg. Co., list Mar. 20, 1889. } 65&10@75% Much lower net prices often made.
Mallory, Wheeler & Co., list July, '88.
Sargent & Co., list Aug. 1, '88
Reading Hardware Co., list Feb. 3, '88.
Brittan, Graham & Mathes, list Jan. 1890.
Perkins' Burglar Proof.....60&10&10%
Plate.....60&35%
Barnes Mfg. Co.....33⅓&2%
Yale.....40@40&10%
Deits Flat Key.....net prices
L. & C. Round Key Latches.....30%
L. & C. Flat Key Latches.....60&10%
Romer's Night Latches.....33⅓&10%
Brooklyn Latches.....18%
Shepardson or U. S.....50&10%
Seed's N. Y. Hasp Lock.....35%

Padlocks—

List June 10, 1891.....50&3%
Norwich Lock Mfg. Co., old list....70&3%
Yale Lock Mfg. Co.'s.....net prices
Eagle.....35&3%
Eureka, Eagle Lock Co.....40&3%
Romer's, Nos. 0 to 91.....30%
Romer's Scandinavian, &c., Nos. 100 to 505.....15%
A. E. Deits.....40%
Champon Padlocks.....40%
Hotchkiss.....40%
Star.....30%
Horseshoe.....₩ dos, $9, 40@40&10%
Barnes Mfg. Co.....40@40&10%
Nock's.....30%
Brown's Pat.....35%
Scandinavian.....90@90&10%
E. T. Fraim's Keystone Scandavian. Nos. 119, 130, 130 and 140.....90&10% Other Nos.....40@45%
Ames Sword Co. up to No. 150.....40%
Ames Sword Co. above No. 150.....30%
Slaymaker Barry & Co.
No. 1010 line.....35&5%
No. 41 line.....45&10%
No. 61 line.....50&5%
No. 21 line.....75%

Sash, &c.

Clark's, No. 1, $10; No. 2, $8 ₩ gr. .33⅓%
Ferguson's.....33⅓%
Victor.....60&10&3%
Walker's.....10%
Attwell Mfg. Co.....25&33⅓%
Reading.....65%&10@65%&10&10%
Hammond's Window Springs.....40%
Common Sense, Jap'd, Cop'd and Br'sed.....₩ gr $4.00
Common Sense, Nickel Plate.....₩ gr $10.00
Universal.....30%
Kempshall's Gravity.....60%
Kempshall's Model.....60@60&10%
Corbin's Daisy, list Feb. 15, 1888.....70%
Payson's Perfect.....60&10%
Huguinin's Sash Balances.....25&5&3%
Huguinin's New Sash Locks.....25&5&3%
Stoddard "Practical".....10%
Ives' Patent.....60&10@60&10&5%
Liesche's, No. 100, ₩ gr $8; 105, $10..30%
Davis, Bronze, Barnes Mfg. Co.....50%
Champion Safety, list January, 1889..70%
Security.....70%
Giant, list Jan., 1892.....75%

Lumber Tools—See Tools, Lumber

Lustre—

Four-ounce Bottles....₩ dos, $1.75; ₩ gross.....$17 00

Machines.

Boring—

	Without Augers.	Upright.	Angular.	
Douglas	$5.50	$6.75		50%
Snell's, Rice's Pat.	5.50	6.75	40&10&10%	
Jennings	5.50	6.75	45@45&10%	
Other Machines	2.35	2.75		
Phillips' Patent with Augers	7.00	7.50		
Miller's Falls	7.50			25%

Fluting.

Knox, 4½-inch Rolls.....$3.25 each } 35%
Knox, 6-inch Rolls.....$3.60 each }
Eagle, 3½-inch Roll. $3.15..... 35%
Eagle, 5½-inch Roll, $2.85..... 35%
Crown, 4½ in., $3.50; 6 in., $4.00; 8 in., $6.50 each.....35%
Crown Jewel 6 in.....$3.50 each, 35%
American, 5 in., $3.00; 6 in., $3.40; 7 in., $4.50 each.....35%
Domestic Fluter.....each, $1.50
Geneva Hand Fluter, White Metal ₩ dos $12, 25%
Crown Hand Fluter, Nos. 1, $15.00 } $12.50; 3, $10.00.....30%
Shepard Hand Fluter, No. 85 ₩ dos 15 90.....40%
Shepard Hand Fluter, No. 110 ₩ dos $11.00.....40%
Shepard Hand Fluter, No. 95 ₩ dos $8.00.....40%
Clark's Hand Fluter, ₩ dos $15.00.....35%
Combined Fluter and Sad Iron. ₩ dos $15.00.....30%
Buffalo ₩ dos $10.00.....10%

Hoisting—

Moore's Hand Hoist, with Lock Brake.....30%
Moore's Differential Pulley Block....40%
Energy Mfg. Co's.....25%
Sure Grip Steel Tackle Blocks.....25%

Washing—

Anthony Wayne, ₩ dos No. 1, $51 No. 2, $45; No. 3, $42.
Western Star ₩ dos No. 2, $45 No. 3 $48.

Mallets.
Hickory.....20&10@20&10@10%
Lignumvitæ.....20&10@20&10@10%
S. & L. Block Co., Hickory & L. V. ....30@30&10%

Mattocks. Regular list. 60&10@60&10&5%

Measures—
Standard Fiberware, No. 1, peck, ₩ dozen, $4; ½-peck, $3.50.

Meat Cutters—See Cutters, Meat.

Menders, Harness—
Per doz.....$2.00

Mills.
Coffee—
Net prices are often made which are lower than above discount.
American, Enterprise Mfg Co.30&10@30%
The Swift, Lane Bros.....20&10%

Mincing Knives — See Knives, Mincing.

Molasses Gates—See Gates, Molasses.

Money Drawers — See Drawers, Money.

Mowers, Lawn.
Pennsylvania, New Model, Excelsior, Continental, &c.....60@60&5%
Philadelphia.....60&10%
Perfection.....60&10@60&10&5%
Easy.....60&10@60&10&5%
Bay State.....60&10@60&10&5%
Other Machines.....60&10&5@70%

Muzzles—
Safety.....₩ doz, $3.00, 25 %

Nails.
Cut and Wire. See Trade Report.
Wire Nails, Papered.
Association list, July 15, '89.75&10@80%
Tack Mfrs.' list.....70@70&10%
Wire Nails, Standard Penny.
Card June 1 '89 base.....$1.95 @ $2.00

Horse—

Nos.	6	7	8	9	10
Ausable	28	26	25	24	23

40&5&5&2%

Clinton, Fin.	19	17	16	15	14
Essex	28	26	25	24	23

40&5&5&2%

Lyra	19	17	16	15	14
Snowden	19	17	16	15	14
Putnam	23	21	20	19	18

1000 ₺ in year 15%

Vulcan	23	21	20	19	18
Northwest'n	25	23	23	21	20

25@25&5%

Globe	23	21	20	19	18

20&5&5%

Boston	23	21	20	19	18

20&5&5%

A. C.	25	23	22	21	21

25&10@33⅓&5%

C. B.-K.	25	23	22	21	21

25&10@33⅓&5%

Maud S.	25	23	22	21	21

40&10 %

Champlain	28	26	25	24	23

25&10&10%

Saranac	23	21	20	19	18
Champion	25	23	22	21	20

10&10&10%

Capewell	23	26	5	24	23

35&5@35&10%

Star	23	21	20	19	18

10&10@10&12½%

Anchor	23	21	20	19	18
Western	23	21	20	19	18

Empire Bronzed.....14 ₩ ₺.

Picture—
Brass Head, Sargent's list.....50&10&10%
Brass Head, Combination list.....50&10%
Porcelain Head, Sargent's list.50&10&10%
Porcelain Head, Combination list..40&10%
Niles' Patent.....40%

Nail Pullers.—See Pullers, Nail.

Nail Sets.—See Sets, Nail.

Nut Crackers.—See Crackers, Nut.

Nuts—List Dec. 18, 1889.

	Square.	Hex.
Hot Pressed	5.35¢	5.95¢ off list.
Cold Punched	5.00¢	5.10¢ off list.

In packages of 100 ₺, add 1-10¢ ₩ ₺, net; in packages less than 100 ₺, add ½¢ ₩ ₺, net.

Oakum—
Best or Government.....₩ ₺ 7@7½¢
U. S. Navy.....₩ ₺ 6@6½¢
Navy.....₩ ₺ 5½@6¢

Oilers—
Zinc and Tin.....65&10&10&5%
Brass and Copper.....50&10@50&10&5%
Malleable, Hammers' improved, No. 1, $3.60; No. 2, $4.00; No. 3, $4.40 ₩ doz. 10@10&5%
Malleable, Hammers, Old Pattern, same list.....40%
Prior's Pat. or "Paragon" Zinc. 60&10&10%
Prior's Pat. or "Paragon" Brass.....50%
Olmstead's Tin and Zinc.....60%
Olmstead's Brass and Copper.....50%
Broughton's Zinc.....60%
Broughton's Brass.....50%
Gem P. D. & Co.....₩ gro. $2
Steel, Draper and Williams.....50%

Openers, Can.
Messenger's Comet.....₩ doz $3.00, 25%
American.....₩ gross $2.75@$3.00
Duplex.....doz 25c, 15@20%
Lyman's.....₩ doz $3.75, 20%
No. 4 French.....₩ doz $2.25, 55@60%
No. 5, Iron Handle.....₩ gr $6.00, 46@50%
Eureka.....₩ doz $2.50, 10%
Sardine Scissors.....₩ doz $2.75@3.00
Star.....₩ doz $2.75
Sprague, No. 1, $2.00 2, $2.25; 3, $2.50. 50&10&10%
Excelsior No. 1 $2.50; No. 2, $1.50.....40%
World's Best, ₩ gross, No. 1, $12.00; No. 2, $24.00; No. 3, $36.00.....50&10%
Universal, ₩ doz $3.00.....55&5%
Domestic, ₩ doz $2.50.....45%
Champion ₩ doz $2.00.....50%

Packing, Steam—
Rubber—
Standard.....60&5@65%
Extra.....50@50&5%
N. Y. B. & P. Co., Standard.....50%
N. Y. B. & P. Co., Empire.....60%
N. Y. B. & P. Co., Salamander.....25%
Jenkins' Standard. ₩ ₺ 80¢.....25@25&5%
Miscellaneous—
American Packing.....10@11¢ ₩ ₺
Russia Packing.....14¢ ₩ ₺
Italian Packing.....13@14¢ ₩ ₺
Cotton Packing.....15@17¢ ₩ ₺
Jute.....7@8¢ ₩ ₺

Pails.
Galvanized Iron—

Quarts	10	12	14
Hill's Light Weight, ₩ doz.	$2.75	3.00	3.25
Hill's Heavy Weight, ₩ dz.	3.00	3.25	3.75
Helwig's	2.35	2.75	3.00
Sidney Shepard & Co.	2.35	2.85	3.05
Iron Clad	2.50	2.75	3.00
Fire Buckets	2.75	3.25	3.50

Buckets, see Well Buckets.
Indurated Fibre Ware—25%
Star Pails, 12 qt.....₩ doz $5.40
Stable and Milk, 14 qt.....₩ doz $6.00
Fire Pails, deep.....₩ doz $5.40
" round bottom.....₩ doz $7.80
Standard Fibre Ware—

	Plain.	Deer'd
Water Pails, 12 qt., per doz.	$4.00	$4.50
Dairy Pails, 14 qt., per doz.	4.50	5.00
Fire Pails, No. 1, 12 qt. per doz	4.50	
Fire Pails, No. 2, 14 qt. per doz	5.00	
Sugar Pails	6.00	6.50
Horse Pails	5.00	
Buggy Pails	4.00	
Slop Jars (bal. trap)	8.00	9.00
Chamber Pails, 14-qt.	6.50	7.50

Pans.
Dripping.
Small sizes.....₩ ₺ 6½¢
Large sizes.....₩ ₺ 6½¢
Silver & Co. (Covered).....40%
Fry—
Standard List:

No.	0	1	2	3	4
₩ doz.	$3.00	$3.75	$4.25	$4.75	$5.25
No.	5	6	7	8	
₩ doz.	$6.00	$7.00	$8.00	$9.00	

Polished, regular goods.....75@75&10%
Acme Fry Pans.....60&10%
Dust—
Steel Edge, No. 1.....₩ doz $1.75

Paper and Cloth—
Sand and Emery—
List April 19, 1886.....50@50&10%
Sibley's Emery and Crocus Cloth.....30%

Parers.
Apple.
Advance.....₩ doz $4.75
Baldwin.....₩ doz 5.25
Bonanza.....each 5.00
Daisy.....each 4.00
Eclipse.....each 7.50
Eclipse.....₩ doz 4.25
Eureka, 1888.....each 16.00
Family Bay State.....₩ doz 12.00
Favorite.....₩ doz 5.00
Gold Medal.....₩ doz 4.00
Ideal.....₩ doz 4.00
Improved Bay State..₩ doz 27.00 @ 30.00
Little Star.....₩ doz 4.50
Monarch.....₩ doz 13.50
New Lightning.....₩ doz 5.50
Oriole.....₩ doz 4.00
Penn.....₩ doz 4.00
Perfection.....₩ doz 4.00
Pomona.....₩ doz 4.00
Rocking Table.....₩ doz 6.00
Turn Table.....₩ doz 4.50
Victor.....₩ doz 13.50
Waverly.....₩ doz 4.00
White Mountain.....₩ doz 4.00
72.....₩ doz 4.25
78.....₩ doz. 7.00
Potato—
White Mountain.....₩ doz $4.50
Antrim Combination.....₩ doz $5.50
Hoosier.....₩ doz $13.50
Saratoga.....₩ doz $5.50

Pencils—
Faber's Carpenters'.....high list 50%
Faber's Round Gilt.....₩ gro $5.25
Dixon's Lead.....₩ gro $4.50
Dixon's Lumber.....₩ gro $6.75
Dixon's Carpenters'.....10%

Picks—
Railroad or Adze Eye, 5 to 6, $12.00; 6 to 7, $13.00.....60&10@60&10&5%

Picture Nails.—See Nails, Picture.

Pinking Irons.—See Irons, Pinking.

Pins.
Box—
Humason, Beckley & Co.'s.....60&10%
Sargent & Co's...$17 and $18.....60&10%
Peck, Stow & W Co...50&10&50&10&5%
Curtain—
Silvered Glass.....net
White Enamel.....net
Escutcheon.
Iron, list Nov. 11, 1885..50&10@50&10&5%
Brass.....60@60&5%

Pipe, Wrought Iron—
List September 18, 1889.
1¼ and under, Plain.....57½@60%
1¼ and under, Galvanized.....47½@50%
1½ and over, Plain.....67½@70%
1½ and over, Galvanized.....55@57½%
Boiler Tubes,
Sizes up to 2¾ in. inclusive.....55%
Sizes 3 in. and larger.....65%
Casing.....55%
Inserted Joints Casing.....50%
Steel Boiler Tubes.....30%

Planes and Plane Irons—
Wood Planes—
Molding.....40&10%
Bench, First Quality.....50&10%
Bench, Second Quality.....55&10%
Bailey's (Stanley R. & L. Co.).....50&10%
Iron Planes—
Bailey's (Stanley R. & L. Co.).....50&10%
Miscellaneous Planes (Stanley R. & L. Co.).....25&10%
Steer's Iron Planes.....35@35&10%
Meriden Mal. Iron Co.'s.....40@40&10%
Davis's Iron Planes.....40@40&10%
Birmingham Plane Co.....50@50&10%
Gage Tool Co.'s Self-Setting.....20&10&10%
Chaplin's Iron Planes.....40@40&10%
Sargent's.....30&10@30&10&10%
Standard Tool Co.....50@50&5%
Plane Irons—
Butcher's.....$5.00@$5.25 to 2
Buck Bros.....30%
Auburn "Thistle."
Ohio.....30&10%
Sandusky.
S. & I. J. White.....25%
Stanley R. & L. Co.....5%&10%

Plates.
Fallce.....₩ ₺ 64@8½¢
Button's Patent.....50@50&10%
Hall's No. 2, 5 in., $13.50; No. 4, 7 in. $31.00 ₩ doz.....20&10@33⅓&5%
Humason & Beckley Mfg. Co..50@50&10%
Lindsay's Giant.....40%
Gas Pliers.....60%
Gas Pliers, Custar's Nickel Plated..60&25%
Eureka Pliers and Nippers.....40%
Russell's Parallel.....25%
P. S. & W. Cast Steel.....50%
P. S. & W. Tinners' Cutting Nippers, add 5% dis 10%
Carew's Pat. Wire Cutters.....20%
Morrill's Parallel, ₩ doz, $12.00....30&5%
Cronk's 8 in., $15.00; 10 in. $21.00, 40@40&5%

Plumbs and Levels—
Regular List.....75&10@75&10&5%
Stanley R. & L. Co.'s Duplex and Hand Levels.....20&10%
Disston's.....50%
Pocket Levels.....70&10@70&10&10%
Davis Iron Levels.....30%
Davis' Inclinometers.....10&10%

Poachers.
Egg
Buffalo Steam Egg Poachers, ₩ doz, No. 1, $6.00; No. 2, $9.00.....25%
Silver & Co., 6-Ring..₩ doz $4; 5-Ring $2

Pokes, Animal—
Bishop's I. X. L.....₩ doz $6.00
Bishop's O. K.....₩ doz $5.25
Bishop's Pioneer.....₩ doz $3.75
Bishop's American.....₩ doz $2.75
Eagle, Double Stale.....₩ doz $5.75
Eagle, Single Stale.....₩ doz $3.75
Buckeye, Single Stale.....₩ doz $2.75

Police Goods.
R. I. Tool Co., Handcuffs, $15.00₩ doz 10%
R. I. Tool Co., Leg Irons, $25.00 ₩ doz 10%
Tower's.....25%
Daley's Improved Handcuffs: 2 Hands, Polished, ₩ doz $48.00; Nickeled, $57.00; 3 Hands, Polished, ₩ doz $72.00; Nickeled, $84.00.....25%
J. P. Lovell's Police Goods.....25%

Polish, Metal.
Prestoline.....30%
Prestoline Paste.....33⅓%
Gaston's Silver Compound.....33⅓%

Polish, Stove.
Joseph Dixon's.....₩ gro $6.00, 10%
Gem.....₩ gro $4.50, 10%
Gold Medal.....₩ gro $6.00, 25%
Mirror.....₩ pro $6.00, —%
Lustro.....₩ gro $4.75
Ruby.....₩ gro $3.75
Rising Sun, 5 gro lots.....₩ gro $5.50
Dixon's Plumbago.....₩ ₺ 8¢
Boynton's Noon Day, ₩ gro.....13.00
Parlor Pride Stove Enamel..₩ gro
Yates' Liquid, 2 3 5 10 gal.... ₩ gal ...$0.30 .70 .60 .50
Yates Standard Paste Polish, 10-₺ cans, ₩ ₺ 12½¢
Jet Black.....₩ gro $3.50
Japanese.....₩ gro $3.50
Fireside.....₩ gro $2.50
Diamond J. K. Enamel.....₩ gro $19.00
Bonnell's Liquid Stove Polish..₩ gro $9.00
Bonnell's Paste Stove Polish..₩ gro $6.00
Black Eagle Benzine Paste, 5 and 10 ₺ cans.....12½¢
Black Jack Water Paste, 5 and 10 ₺ cans.....12½¢
Nickel Plate Paste.....₩ gro $6.00
Crown Paste.....₩ gross, $7.20
Crown Paste, in 5 and 10 ₺ pails ₩ ₺ 12¢
Black Flag.....₩ gross, $7.20
Black Flag, 5 and 10 ₺ pails,...₩ ₺, 12¢
Black Flag, liquid, in bottles, ₩ gro..$8.00
Diamond Rock Nickel Cleaner..₩ gro $10.20

Poppers, Corn—
Round or Square, 1 qt..₩ gr $10.00@10.50
Round or Square, 1½ qt..₩ gr $15@15.50
Round or Square, 2 qt..₩ gr $18.50@19.00

Post Hole and Tree Augers and Diggers—See Diggers, Post Hole, &c.

Potato Parers—See Parers, Potato.

Pots.
Glue—
Tinned.....40&10@40&10&5%
Enameled.....40&10@40&10&5%
Family, Howe's "Eureka".....40%
Family, L. F. C.'s "Handy".....50%

Presses.
Fruit and Jelly—
Enterprise Mfg. Co.....20&10@30%
Henis.....₩ doz $3.50
Shepard's Queen City.....40%
Silver & Co.....₩ doz $2.75

Pruning Hooks and Shears.—See Shears.

Pullers.
Nail.
Scranton.....₩ doz $13.00, 33⅓%
Curtiss Hammer.....₩ doz $9.00
Giant, No. 1.....₩ doz. $13.00, 10%
Giant, No. 2.....₩ doz. $15.00, 10%
Pelican.....₩ doz, $9.00, 25%
Eclipse.....each, $2.00 net

Pulleys.
Hot House, Awning, &c.....60&10%
Japanned Screw.....60&10%
Brass Screw.....60&10%
Japanned Side.....60%&10%
Japanned Clothes Line.....60&10%
Empire Sash Pulley.....55@60%
Moore's Sash, Anti-Friction.....50%
Hay Fork, Solid Eye, $4.00; Swivel, $4.50.....50&10@50&10&5%
Hay Fork, "Anti-Friction," 5 in. Solid, $5.70.....50%
Hay Fork, "F" Common and Pat. Bushed.....20%
Hay Fork, Tarbox Pat. Iron.....20%
Hay Fork, Reed's Self-Lubricating...60%
Shade Rack.....45%
Tackle Blocks.....See Blocks
Moore's Anti-Friction 5 in. Wheel, ₩ doz $12.00.....40%

Pumps—
Cistern, Best Makers.....60@60&10%
Pitcher Spout, Best Makers.....67½@70%
Pitcher Spout, Cheaper G'ds..75@75&10%

Punches—
Saddlers' or Drive, good, ₩ doz...60@65%
Bemis & Call Co.'s Cast Steel Drive..50&5%
Bemis & Call Co's Springfield Socket.50&5%
Spring, good quality....₩ doz $2.50@2.60
Spring, Leach's Pat.....15%
Bemis & Call Co.'s Spring and Cheek..40%
Solid Tinners', P.S. & W. Co., ₩ doz $1.44, 55%
Tinners' Hollow Punches P.S. & W. Co. 20&2%
Rose Hand Punches.....15%
Avery's Revolving.....40%
Avery's Saw-Set and Punch. See Saw Sets

Rail—
Sliding Door, Wr't Brass, ₩ ₺ 35¢.....15%
Sliding Door, Bronzed Wr't Iron..₩ ft. 7¢
Sliding Door, Iron, Painted, ₩ foot 4¢, 40%
Barn Door, Light, In. ½ ¾ 1
Per 100 feet.....$2.00 2.60 3.10, 10%
B. D. for N. E. Hangers—

	Small.	Med.	Large.
Per 100 feet	$2.15	2.70	3.25 .no

Terry's Steel Rail, ₩ foot.....4½¢
Victor Track Rail, 7, ₩ foot.....50&5%
Carrier Steel Rail, ₩ foot.....4½¢
Moore's Wrought Iron.....50%

Rakes—
Cast Steel, Association goods...65%@70%
Cast Steel, outside goods 50&10&10@70&5%
Malleable.....70@70&5%
Gibbs Lawn Rake.....₩ doz $1.90
Canton Lawn Rake.....₩ doz $3.75
Favorite Lawn Rake.....₩ doz $4.40
Ft. Madison Prize Bow Brace and Feerless.....65%
Fort Madison Steel Tooth Lawn Rake, $6.00.....35%

Razors—
J. R. Torrey Razor Co.....30%
Wostenholme and Butcher, $10.00 to £, 10%
Jordan's AAAI, new list.....net
Jordan's Old Faithful, new list.....net
Galvanic.....₩ doz $15.00

Razor Strops—See Strops, Razor.

Rings and Ringers.
Bull Rings—
Union Nut Co.....55%
Sargent's.....65%&10@70&5%
Hotchkiss' low list.....30%
Humason, Beckley & Co.'s.....70&10%
Peck, Stow & W. Co's..50&10@50&10&10%
Ellrich Hdw. Co., White Metal, low list. 50@50&10%
Hog—
Top of the Hill Ringers.....₩ doz $2.00
Top of the Hill Rings.....₩ doz $1.25
Hill's Improved Ringers.....₩ doz $1.25
Hill's Old Style Ringers.....₩ doz $1.13½
Hill's Tongs.....₩ doz $3.00
Hill's Rings.....₩ doz box $1.00
Perfect Rings.....₩ doz box $1.50
Perfect Ringers.....₩ doz $2.15@$2.25
Blair's Hog Ringers.....₩ doz $2.00
Blair's Hog Rings.....₩ doz 90¢@$1.00
Champion Ringers.....₩ doz $2.00
Champion Rings, Double.....₩ doz $2.25
Brown's Ringers.....₩ doz $2.00
Brown's Rings.....₩ doz $1.15@1.25
Electric Hog Rings....₩ doz boxes $1.50
Electric Hog Ringers.....₩ doz $2.00

Rivets and Burrs—
Iron, list Nov. 17, '87.....40%
Copper.....60&10@60&10&5%
Coppered Iron, Bettina Brand.....40%

Rivet Sets—See Sets.

Rods—
Stair, Brass.....35&5%
Stair, Black Walnut.....₩ doz 40¢

Rollers—
Barn Door, Sargent's list.....60&10&10%
Acme Moore's Anti-Friction.....55%
Union Barn Door Roller.....70%

Rope.
Manila, 7-16 in. diam. and larger ₩ ₺ 12½¢
Manila.....½ in. ₩ ₺ 12½¢
Manila.....¼ and 5-16 in. ₩ ₺ 13½¢
Manila Tarred Rope.....₩ ₺ 11½¢
Manila, Hay Rope.....₺ 12½¢
Sisal.....7-16 inch and larger ₩ ₺ 9½¢
Sisal.....½ in. ₩ ₺ 9½¢
Sisal.....¼ and 5-16 in. ₩ ₺ 10½¢
Sisal, Hay Rope.....₩ ₺ 9½¢
Sisal, Tarred Rope.....₩ ₺ 8½¢
Sisal, Medium Lath Yarn.....₩ ₺ 8½¢
New Zealand..7-16 in. & larger ₩ ₺ 8½¢
New Zealand.....½ inch, ₩ ₺ 9½¢
New Zealand, ½ and 5-16 inch, ₩ ₺ 9½¢
New Zealand, Hay Rope.....₩ ₺ 8½¢
New Zealand, Tarred Rope.....₩ ₺ 8½¢

Note.—Manufacturers' prices on above 1¢ ₩ ₺ less, f.o.b. factory—less 1½ % for cash.

Cotton Rope.....₩ ₺ 13½@14¢
Jute Rope.....₩ ₺ 6½@7¢
Wire—
List May 1, 1886.
Iron.....32½&2½%
Iron, Galvanized.....40&2½%
Cast Steel.....40&2½%

Rules—
Boxwood.....80&10&10&10&10&10%
Boxwood, Stanley R. & L. Co..80&10&10%
Ivory.....50@50&10%
Starrett's Rules and Straight Edges, Steel.....25&10%

Sad Irons—See Irons, Sad.

Sand and Emery Paper and Cloth—See Paper and Cloth, Sand and Emery.

Sash Cord—See Cord, Sash.

Sash Locks—See Locks, Sash.

Sash Weights—See Weights, Sash.

Sausage Stuffers or Fillers—See Stuffers or Fillers, Sausage.

Saws—The following prices are often cut by jobbers.

Disston's Circular	45@45&5%
Disston's Cross Cuts	45@45&5%
Disston's Hand	20@20&5%

Woodrough & McFarlin.....60%
Hand, Panel and Rip.....25@25&5%
Narrow Champion Cross Cuts with Handles, ₩ foot.....18@20¢
Champion Thin Back Cross Cuts, ₩ foot.....26@28¢
Champion Extra Thin Back Cross Cuts, ₩ foot.....29@31¢
One Man Champion Cross Cuts, ₩ foot.....37@40
Wheeler, Madden & Clemson Mfg. Co.
Hand, Panel and Rip.....30@35&5%
Narrow Champion Cross Cuts with Handles, ₩ foot.....18@20¢
Champion Thin Back Cross Cuts, ₩ foot.....26@28¢
Champion Extra Thin Back Cross Cuts, ₩ foot.....29@31¢
One Man Champion Cross Cuts, ₩ ft.. 37@40
Atkins' Circular Shingle and Heading dis 50%
Atkins' Silver Steel Diamond X Cuts ₩ foot 70¢
Atkins' Special Steel Dexter X Cuts ₩ foot 50¢
Atkins' Special Steel Diamond X Cuts ₩ foot 32¢
Atkins' Champion and Electric Tooth X Cuts.....₩ foot 30¢
Atkins' Hollow Back X Cuts..₩ foot 20¢
Atkins' Mulay, Mill and Drag.....40%
Atkins' One-Man Saw, with handles, ₩ foot 40¢
Peace Circular and Mill.....45@45&5%
Peace Hand Panel and Rip....25@25&5%
Peace Cross Cuts.....45@45&5%
Richardson's Circular and Mill.40@45&5%
Richardson's X Cuts.....45@45&5%
Richardson's Hand, &c.....25@25&5%
C. E. Jennings & Co., Hand, Panel and Rip.....25@25&10%

Hack Saws—

Grimm's, complete.....40&10@50%
Grimm's Hack Saw, Blades....40&10@50%
Star Hack Saws and Blades.....25%
Eureka and Crescent.....25%

Scroll—

Lester, complete, $10.00..... .....25%
Rogers, complete, $4.00.....25%
Barnes' Builders' and Cab. Makers' $15.25%
Barnes' Scroll Saw Blades.....35%

Saw Frames—See Frames, Saw.

Saw Sets—See Sets, Saw.

Saw Tools—See Tools, Saw.

Scales—

Hatch, Counter, No. 171, good quality, ₩ doz $21.00
Hatch, Tea, No. 161....₩ doz $6.75@7.00
Union Platform, Plain.....$2.10@2.20
Union Platform, Striped.....$2.40@2.50
Chatillon's Grocers' Trip Scales 50%
Chatillon's Eureka.....25%
Chatillon's Favorite.....40%
Family, Turnbulls.....30@30&10%
Riehle Bros.' Platform.....40%

Scale Beams—See Beams, Scale.

Scissors, Fluting.....45%

Scrapers—

Adjustable Box Scraper (S. R. & L. Co.) $3.50.....30&10%
Box, 1 Handle.....₩ doz $4.00. 10%
Box, 2 Handle.....₩ doz $6.00, 10%
Defiance Box and Ship.....20&10%
Foot.....50&10@60%
Ship, Common .....₩ doz $3.50 net
Ship, R. I. Tool Co.....10%

Screen Window and Door Frames—See Frames.

Screw Drivers—See Drivers, Screw.

Screws.

Bench and Hand—

Bench, Iron.....55&10@55&10&10%
Bench, Wood, Beech.....₩ doz $2.25
Bench, Wood, Hickory.....20&10%
Hand, Wood.....25&10@25&10&5%
Hand, Grand Rapids, list.....55%
Lag, Blunt Point, list Jan. 1, 1890.75&10%
Coach and Lag. Gimlet Point, list Jan. 1, 1890.....75@75&10%
Bed.....25&5%
Hand Rail, Sargent's.....60%&10%
Hand Rail, H. & F. Mfg. Co...70&10@75%
Hand Rail, Am. Screw Co.....75%
Jack Screws, Millers Falls list..50@50&5%
Jack Screws, P. S. & W.....35%
Jack Screws, Sargent...60&10@60&10&5%
Jack Screws Stearns'.....40@40&10%

Cork—

Humason & Beckley Mfg. Co..40&10@50%
Williamson's.....35%@35%&5%
Howe Bros & Hulbert.....35%

Machine—

Flat Head, Iron.....55%
Round Head, Iron 50%

Wood—

List January 1, 1891.

Flat Head Iron	70	Extra 10 % off.
Round Head Iron	65	
Flat Head Brass	70	
Round Head Brass	65	
Flat Head Bronze	70	
Round Head Bronze	65	

Rogers' Drive Screws.....82½%

Scroll Saws—See Saws, Scroll.

Scythes.

Grain.....40&5@40&10%
Grass.....40&10@50%

Scythe Snaths—See Snaths, Scythe

Sets.

Awl and Tool.

Aiken's Sets, Awls and Tools, No. 20, ₩ doz $10.00.....55&10%
Fray's Adj. Tool Hdls., Nos. 1, $12; 2, $18; 3, $12; 4, $9.....25@25&10%
Miller's Falls Adj. Tool Hdls.. Nos. 1, $12; 2, $18.....25%
Henry's Combination Haft...₩ doz $6.50
Stanley's Excelsior: No. 1, $7.50; No. 2, $4.00; No. 3, $5.50.....30&10%
Common Lead Sets, No. 42, $10.50; No. 43, $12.50..70&10&5%

Nail—

Square.....₩ gr., $4 00@$4.25
Round.....₩ gr. $3.25
Buck Bros.....27½%
Cannon's Diamond Point...₩ gr.,$12, 20%

Rivet,

Regular list.....50&10%

Saw—

Stillman's Genuine...₩ doz $5.00@7.75, 40&5%
Stillman's Pattern Hand, ₩ doz $3.25; Cross Cut, 5.25.....45&50%
Common Lever .....₩ doz $2.00, 45@50%
Merrill's No. 1, $15.00; Nos. 3&4, $24.00. 40&10@50%
Leach's. .No. 0, $8.00; No. 1, $15, 15@20%
Nash's .....20&10@20&10&10
Hammer, Hotchkiss.....$5.50, 10%
Hammer, Bemis & Call Co.'s new Pat. 30&5%
Bemis & Call Co.'s Lever and Spring Hammer.....30&5%
Bemis & Call Co.'s Plate.....10%
Bemis & Call Co.'s Cross Cut 12½%
Aiken's Genuine.....$13.00, 50&10@60%
Aiken's Imitation.....$7.00, 55&5%
Hart's Pat. Lever.....20%
Disston's Star. 25%
Leopold.....40&10@50%
Atkin's Lez.....₩ doz No. 1, $6.00
Atkin's Criterion.....₩ doz No. 1, $6.00
Croissant (Keller), No. 1, $15.00; No. 2, $24.00.....40&10%
Avery's Saw Set and Punch.....50%
Chieftain Co.'s Superior.....₩ doz $7.00
Chieftain Co.'s Royal.....₩ doz $7.50
Crescent.....₩ doz $3.00

Sharpeners, Knife.

Parkins.

Applewood Handles...₩ doz $6.00, 40%
Rosewood or Cocobola.₩ doz $900 40%

Shaves, Spoke

Iron.....45%
Wood.....30%
Bailey's (Stanley R. & L. Co.).....40&10%
Stearns'.....30&10%
Cincinnati.....25&10%
Goodell's, ₩ doz $9.00.....25%

Shears—

American (Cast) Iron...75&10@75&10&5%
Barnard's Lamp Trimmers...₩ doz $3.75
Tinners'.....20&2%
Seymour's, List, Dec., 1881. 60&10&10@60&10&10&5%
Heinisch's, List, Dec., 1881. 60&10&10@60&10&10&5%
Heinisch's Tailor's Shears.....33⅓%
Cast Steel Trimmers; First quality .....30@30&10% Second quality.....30&10@30&10&10%
Acme Cast Shears.....10&10%
Diamond Cast Shears.....10%
Clipper.....10&10%
Victor Cast Shears.....75&10@75&10&5%
Howe Bros. & Hulbert, Solid Forged Steel.....40%
Chicago Drop Forge & F. Co., Solid Steel Forged.....60%
Davenport Cutlery Co .....60@60&10%
Clauss Shear Co., Japanned.....70%
Clauss Shear Co., Nickeled, same list.60%
Galvanic, 3¼ to 9 in, ₩ doz, $1.00 ₩ inch

Pruning Shears and Hooks.

Disston's Combined Pruning Hook and Saw.....₩ doz $18.00, 20&10%
Disston's Pruning Hook, ₩ doz $12.00, 20&10%
E. S. Lee & Co.'s Pruning Tools.....40%
Pruning Shears, Henry's Pat, ₩ doz $3.75@4.00
Henry's Pruning Shears, ₩ doz $4.25@4.50
Wheeler, M. & C. Co.'s Combination, ₩ doz $12.00, 20%
Dunlap's Saw and Chisel, ₩ doz $8.50, 30%
J. Mallinson & Co., No. 1, $5.25; No. 2 7.25
P., S. & W. Co.....60%

Tinners', &c.—

Shears and Snips (P. S. & W.).....20@25%
Snips, J. Mallinson & Co.....33⅓%

Sheaves—

Sliding Door—

M. W. Co., list July, 1888..50&10@60&5%
R. & E., list Dec. 15, 1885.....55&20%
Corbin's list.....60&10&2%
Patent Roller.....60&10&2%
Patent Roller, Hatfield's.....75%
Russell's Anti-Friction, list Dec. 18, 1885.....50&2%
Moore's Anti-Friction.....50%

Sliding Shutter—

R. & E. list Dec. 18, 1885 .....60&10&2%
Sargent's list.....60&10%
Reading list.....60&10&10%

Shells—

First quality 4, 8, 10 and 12 gauge 25&10&2%
First quality, 14, 16 and 20 gauge ($10 list).....30&10&2%
Prize.....40&2%
Star, Club, Rival and Climax brands, 33⅓&10&2%
Seibold's Comb. Shot Shells.....15&2%
Brass Shot Shells, 1st quality.....60&2%
Brass Shot Shells, Club, Rival, Climax.. 65&2%

Shells Loaded—

Standard List, July 19, 1890..... 40&10&10@40&10&10&5%

Ship Tools—

L. & I. J. White.....20&5%

Shoes, Horse, Mule, &c.—

Horse—

Burden's, Perkins', Phœnix and Bryden's Boss, at factory.....$4.00
Bryden's Frog Pressure, at factory.$5.00

Mule—

Add $1 ₩ keg to above prices.

Ox, Wrought—

Ton lots.....₩ ℔ 9¢
1000 ℔ lots.....₩ ℔ 9½¢
500 ℔ lots.....₩ ℔ 10¢

Shot—

	Ton lots	Small lots
Drop, up to B, 25-℔ bag	$1.37	$1.42
Drop, up to B, 5-℔ bag	.35	.36
Drop, B and larger, 25-℔ bag	1.62	1.67
Drop, B and larger 5-℔ bag	.40	.41
Buck and Chilled, 25-℔ bag	1.62	1.67
Buck and Chilled, 5-℔ bag	.40	.41
Dust Shot, 25-℔ bag	2.00	2.05
Dust Shot, 5-℔ bag	.45	.46

Shovels and Spades—

Ames' Shovels, Spades, &c., list Nov. 1, 1885.....20%
NOTE.—Jobbers frequently give 5@7½% extra on above.
Griffith's Black Iron.....50&10%
Griffith's C. S.....60@60&10%
Griffith's Solid C. S. R. R. Goods.....20%
St. Louis Shovel Co.....20@20&7½%
Hussey, Binns & Co.....15@25%
Hubbard & Co.....20@20&7½%
Lehigh Mfg. Co.....50&10%
H. M. Myers Co.....30%
Payne Pettebone & Son.....33⅓&25%
Remington's (Lowman's Pat.)30&10@40%
Rowland's, Black Iron.....50&10%
Rowland's Steel.....60&5@60&10%

Shovels and Tongs—

Iron Head.....60&10@60&10&5%
Brass Head.....60&10&10%

Sieves—

Mann's Tin Rim.....50&25%
Buffalo Metallic, S. S. & Co.....50&25%
Shaker (Barler's Pat.) Flour Sifters.... ₩ doz $2.00; ₩ gr $21.60
Electric.....₩ gr $21.00
A. & W. Sifters.....₩ doz 2.00
Hunter's.....₩ doz $2.00
Smith's Adjustable Sifters...₩ doz $2.00
Smith's Adjustable Milk Strainer. ₩ doz $2.00
Smith's Adjustable T. & C. Strainer. ₩ doz. $1.35

Sieves, Wooden Rim—

	Iron.	Plated
Mesh 18, Nested, ₩ doz..	80¢	$1.00
Mesh 20, Nested, ₩ doz..	90¢	1.10
Mesh 24, Nested, ₩ doz..	$1.15	1.25

Skeins, Thimble—

Western list.....75&5@75&10%
Columbus Wrt. Steel..Special net prices
Coldbrookdale Iron Co.....60%
Seneca Falls Pattern.....60%
Utica P. S. T. Skeins.....60%
Utica Turned and Fitted.....35%

Slates—

School, by case.....50&10@50&10&10%

Snaps, Harness, &c.—

Anchor (T. & S. Mfg. Co.).....65%
Fitch's (Bristol).....50&10%
Hotchkiss.....10%
Andrews.....50%
Sargent's Patent Guarded.....70&10&10%
German, new list.....40&10%
Covert.....50&10&5&2%
Covert, New Patent.....50&10&5&2%
Covert, New R. E.....60&10&5&2%
Covered Spring.....60&10&10%
E. Covert's Triumph 33⅓%

Snaths, Scythe.

List.....50%

Soldering Irons—See Irons, Soldering.

Spittoons, Cuspidors, &c.

Standard Ware—

Cuspidors, 8¼-inch, ₩ dos., No. 5, $8; No. 5X $9.
Spittoons, Daisy, 8-inch, No. 1, $4; 10 and 11 inch, $6.

Spoke Shaves—See Shaves, Spoke.

Spoke Trimmers—See Trimmers, Spoke.

Spoons and Forks—

Tinned Iron—

Basting, Cen. Stamp. Co.'s list....70&10%
Solid Table and Tea, Cen. Stamp. Co.'s list.....70&10%
Buffalo S. S. & Co.....33⅓&2%

Silver-Plated—(4 mos. or 5% cash 30 days).

Meriden Brit. Co., Rogers.....40&15%
C. Rogers & Bros.....40&15%
Rogers & Bro.....40&15%
Reed & Barton.....40@40&5%
Wm. Rogers Mfg. Co.....40, 15&5%
Simpson, Hall, Miller & Co.....40, 15&5%
Holmes & Edwards Silver Co...40, 15&5%
L. Boardman & Son.....50&12½%

Miscellaneous.

Holmes & Edwards Silver Co.:
No. 67 Mexican Silver.....50&10&5%
No. 30 Silver Metal.....50&10&5%
No. 24 German Silver.....50&10&5%
No. 50 Nickel Silver.....50&5%
No. 49 Nickel Silver.....50&10&5%
Wm. Rogers Mfg. Co.
Rogers' Silver Metal.....50, 10&5%
18% Rogers' German Silver.....60&5%
22% Rogers' Nickel Silver. .....50&5%
German Silver.....50@50&5
German Silver, Hall & Elton..50&5% cash
Nickel Silver.....50&5@50&10&5% cash
Britannia.....60@60&5%
Boardman's N'ck'l Silver, list July 1, 1891.....60&7½&2½%
Boardman's Britannia Spoons, case lots.....60&5% cash

Springs—

Door.—

Torrey's Rod, 39 in ....₩ doz $1.20@1.25
Gray's, ₩ gr., $20.00.....25%
Bee Rod ₩ gr., $20.00.....20@25%
Warner's No. 1, ₩ doz, $2.50; No. 2, $3.30.....50@50&5%
Gem (Coil), list April 19, 1886.. 10@15%
Star (Coil), list April 19, 1886...20@20&5%
Victor (Coil).....60&10@60&10&5%
Champion (Coil).....60&10@60&10&10%
Cowell's....No. 1, ₩ doz, $18.00; No. 2, $15.00.....50@50&10%
Rubber, complete, ₩ doz, $4.50....55&10%
Hercules.....50@50&10%

Carriage, Wagon, &c.—

Elliptic, Concord, Platform and Half Scroll.....60&10&10%
Cliff's Bolster Springs.....25%

Squares—

Steel and Iron.....
Nickel-Plated.....} .80&10@80&10&10%
Try Square and T Bevels...60&10@60&10&10%
Disston's Try Square and T Bevels.....50%
Winterbottom's Try and Miter....30&10%
Starrett's Micrometer Caliper Squares. 25%
Avery's Flush Bevel Squares.....40%
Avery's Bevel Protractor 50%

Squeezers.

Fodder.—

Blair's.....₩ doz $2.00
Blair's "Climax".....₩ doz $1.25

Lemon—

Porcelain Lined, No. 1....₩ doz $6.00, 25&20%
Wood, No. 2.....₩ doz $3.00, 35%
Wood, Common.....₩ doz $1.70@1.75
Dunlap's Improved .....₩ doz $3.75, 20%
Sammis....No. 1, $5.00; No. 2, $9; 12, $18 ₩ doz.....25&10%
Jennings' Star.....₩ doz $2.50
The Boss.....₩ doz $2.50
Dean's..Nos. 1, ₩ doz $6.50; 2, $3.35; 3, $1.90; Queen, $2.50
Little Giant.....50@50&5%
King.....40&5%
Hotchkiss Straight Flash....₩ doz $12.00
Silver & Co., Glass.....₩ gro. $9.00
Manny Lemon Juice Extractor: Standard.....₩ doz $0.75@$1.00 Improved.....₩ doz $2.00

Standard Fiber Ware—See Ware, Standard Fiber.

Staples.

Blind—

Barbed, ½ in. and larger.....₩ ℔ 7@7½¢
Barbed, ¼ in. .....₩ ℔ 8@8½¢
Fence staples, Galvanized. } Same price as B'rb Wire.
Fence Staples, Plain..... } See Trd. Rep.

Steelyards... .....40&10@50%

Stocks and Dies—

Blacksmith's
Waterford Goods.....33⅓ &40%
Butterfield's Goods.....33⅓@10%
Lightning Screw Plate.....30@30%
Reece's New Screw Plates.....33⅓&25&10%
Reversible Ratchet.....30
Gardner.....33⅓

Stops, Bench.

Morrill's.....₩ doz $9, 50%
Hotchkiss's.....₩ doz $5. 10@10&10%
Weston's, No. 1, $10; No. 2, $9.25&10&5%
McGill's.....₩ doz $3.....10%
Cincinnati.....35&10%
Terrell's Nos. 1 and 2, ₩ doz., $3; No. 3, $3.60.....30%

Stone—

Hindostan No. 1, 3¢; Axe, 3½¢; Slips No. 1, 4½¢
Sand Stone.....₩ ℔ 2½¢
Washita Stone, Extra.....₩ ℔ 23@25¢
Washita Stone, No. 1.....₩ ℔ 19@20¢
Washita Stone, No. 2.....₩ ℔ 13@13¢
Washita Slips, No. 1, Extra..₩ ℔ 44@46¢
Washita Slips, No. 1.....₩ ℔ 33@35¢
Arkansas Stone, No. 1, 4 to 6 in₩ ℔ $1.50
Arkansas Stone, No. 1, 6 to 9 in₩ ℔ $1.85
Turkey Oil Stone, 4 to 8 in. .....₩ ℔ 40¢
Turkey Slips.....₩ ℔ $1.00@1.50
Lake Superior, Chase.....₩ ℔ 12¢
Lake Superior Slips, Chase.....₩ ℔ 8¢
Seneca Stone, Red Paper Brand....₩ ℔ 15@20¢
Seneca Stone, High Rounds..₩ ℔ 20@25¢
Seneca Stone, Small Whets..₩ gro $14.00

Stove Polish—See Polish, Stove.

Stretchers, Carpet.

Cast Steel, Polished.....₩ doz $2.25
Cast Iron, Steel Points.....₩ doz 80¢
Socket.....₩ doz $1.75
Gullard's.....25@25&10%

Strops, Razor—

Genuine Emerson.....60@60&5%
Imitation " ....₩ doz $2.00, 30&10&5%
Torrey's.....30%
Badger's Belt and Com.....₩ doz $2.00
Lamont Combination.....₩ doz $4.00
Jordan's Pat. Padded, list Nov. 1,'85.30%
Electric.....List net

Stuffers or Fillers, Sausage—

Miles' "Challenge," ₩ doz $20, 50@50&5%
Perry .....₩ doz, No. 1, $15.00; No. 0, $21.00.....50@25@50&10%
Draw Cut No. 4, each $30.00.....30%
Enterprise Mfg. Co.....20&10@30%
Silver's.....40&10%

Sweepers, Carpet.

Bissell No. 5.....₩ doz $17.00
Bissell No. 7 New Drop Pan.₩ doz $19.00
Bissell, Grand.....₩ doz $30.00
Grand Rapids.....₩ doz $34.00
Crown Jewel, No. 1, $18.00; No. 2, $19.00; No. 3, $20.00
Magic.....₩ doz $15.00
Jewel.....₩ doz $17.00
Improved Parlor Queen, Nickeled.....₩ doz $27.00
Japanned.....₩ doz $24.00
Excelsior .....₩ doz $22.00
Garland .....₩ doz $18.00
Parlor Queen.....₩ doz $24.00
Housewife's Delight.....₩ doz $15.00
Queen.....₩ doz $16.00
Queen, with band.....₩ doz $18.00
King .....₩ doz $30.00
Weed, Improved.....₩ doz $18.00
Hub.....₩ doz $16.00
Cog-Wheel.....₩ doz $16.00
Easy.....₩ doz $22.00
Monarch.....₩ doz $22.00
Goshen.....₩ doz $21.00
Ladies' Friend.....₩ doz $15.00
Advance .....₩ doz $18.00
Supreme.....₩ doz $22.00

Tacks, Brads, &c.—

List October 19, 1889. Old established standard weights Short Weight goods are sold at lower prices.

Carpet Tacks—
American, Blued.....75 %
American, Tin'd and Cop'd.77½ %
Steel, Bright and Blued.....72½ %
Steel, Tinned and Coppered 70 %
Swedes Iron, Blued.....72½ %
Swedes Iron, Tinned.....70 %
American Iron Tacks.....72½ %
Swedes Iron Tacks—
S. S., Blued.....75 %
S. S., Tinned.....77½ %
Lanc., Blued.....66⅔ %
Lanc., Tinned.....72½ %
Gimp and Lace Tacks—
S. S., Blued .....75 %
S. S., Tinned .....77½ %
Lanc., Blued .....66⅔ %
Lanc., Tinned.....72½ %
Basket and Trimmers' Tacks—
Lanc .....65 %
S. S.....70 %
Hungarian Nails.....66⅔ %
Miners' Tacks, S. S.....75 %
Miners' Tacks, Lanc .....70 %
Common and Patent Brads..66⅔ %
Leathered Tacks.....50 %
Brush Tacks.....50 %
Looking Glass Tacks.....50 %
Picture-Frame Points.....50 %
Finishing Nails.....66⅔ %
Trunk and Clout Nails—
Black.....6¾ %
Tinned or Coppered.....66⅔ %
Basket Nails .....62½ %
Chair Nails.....62½ %
Cigar-Box Nails .....50 %
Tin Capped Nails.....50 %

On many of these goods extra Regular discount 10&2 %, cash. 10&10&10 % is often given.

Miscellaneous—

D'ble-Point, 120 count85&10@85&10&10%
Double Point, 100 count.....90%
Wire Carpet Nails.....50&10%
Plymouth Rock Steel Carpet Tacks..25%
Wire Brads and Nails, see Nails, Wire.
Steel-Wire Brads, R. & E. Mfg. Co.'s list.....50&10%

Tapes, Measuring—

American.....40@40&5%
Spring.....40%
Chesterman's, Regular list.....25@30%

Thermometers—

Tin Case.....80@80&10%

Thimble Skeins—See Skeins.

Ties, Bale—See Bale Ties.

Tinned Wire, list.....50&10&5%

Tinners' Shears, &c.—See Shears Tinners'. &c

Tinware—
Stamped, Japanned and Pieced, list Jan. 20 1887.....70&10@70&25%

Tire Benders, Upsetters, &c—
See Benders and Upsetters, Tire.

Tools.
Coopers'—
Bradley's.....20%
Barton's.....20&25%
I. & I. J. White.....25%
Albertson Mfg. Co.....30%
Beatty's.....30@30&25%
Sandusky Tool Co.....30@30&25%
Shaves, Cincinnati Tool Co.....20%

Lumber.
Ring Peavies, "Blue Line"...₩ doz $20.00
Ring Peavies, Common.....₩ doz $18.00
Steel Socket Peavies.....₩ doz $21.00
Mall, Iron Socket Peavies.....₩ doz $19.00
Cant Hooks, "Blue Line".....₩ doz $16.00
Cant Hooks, Common Finish..₩ doz $14.00
Cant Hooks, Mall, Socket Clasp, "Blue Line" Finish.....$16.00
Cant Hooks, Mall, Socket Clasp, Common Finish.....₩ doz $14.50
Cant Hooks, Clip Clasp, "Blue Line" Finish.....₩ doz $14.00
Cant Hooks, Clip Clasp, Common Finish.....₩ doz $12.00
Hand Spikes....₩ doz 6 ft., $15.00; 8 ft., $20.00
Pike Poles, Pike & Hook, ₩ doz., 12 ft., $11.50; 14 ft., $12.50; 16 ft., $14.50; 18 ft., $17.50; 20 ft., $21.50.
Pike Poles, Pike only, ₩ doz, 12 ft., $10.00; 14 ft., $11.00; 16 ft., $13.00; 18 ft., $16.00; 20 ft., $20.00.
Pike Poles, not ironed, ₩ doz, 12 ft., $8.00; 14 ft., $7.00; 16 ft., $9.00; 18 ft., $12.00; 20 ft., $16.00.
Setting Poles, ₩ doz, 12 ft., $14.00; 14 ft., $15.00; 16 ft., $17.00
Swamp Hooks.....₩ doz $18.00

Saw.
Atkins' Perfection.....₩ doz $12.00
Atkins' Excelsior.....₩ doz $8.00
Atkins' Giant.....₩ doz $4.00

Tobacco Cutters—See Cutters, Tobacco.

Transom Lifters — See Lifters, Transom.

Traps—
Game—
Newhouse.....40@40&25%
Oneida Pattern.....70&10%
Game, Blake's Patent.....40&10&25%
Mouse and Rat—
Mouse Wood, Choker, ₩ doz holes, 9@10¢
Mouse, Round Wire.....₩ doz $1.50 10%
Mouse, Cage, Wire.....₩ doz $2.50, 10%
Mouse, Catch-'em-alive....₩ dz $2.50 15¢
Mouse, Bonanza.....₩ doz $0.90@$1.00
Rat, Decoy.....₩ gr $10.00, 10%
Ideal.....₩ gr $10.00
Cyclone.....₩ gr $5.25
Hotchkiss Metallic Mouse, 5-hole traps, ₩ doz., 90¢; in full cases, ₩ doz....78¢
Hotchkiss Vmp. Rat Killer..₩ gro $18.50
Hotchkiss New Rat Killer...₩ gro $16.50
Schuyler's Rat Killer.....₩ gro $18.00

Triers—
Butter and cheese.....25%

Trimmers, Spoke.
Bonney's.....₩ doz $10.00, 50%
Stearns'.....20&10%
Ives', No. 1, $15.00; No. 2, $12.00 ₩ doz. 55&10%
Dougias'.....₩ doz $9.00, 20%
Cincinnati.....25%

Trowels—
Lothrop's Brick and Plastering.....20&10&25&35%
Reed's Brick and Plastering.....15%
Diaston's Br'k and Plastering.....35%
Peace's Plastering.....35%
Clement & Maynard's.....20%
Rose's Brick.....15@30%
Brade's Brick.....35%
Worrall's Brick and Plastering.....20%
Garden.....70%

Trucks, Warehouse, &c.—
B. & L. Block Co.'s list, '92.....40%

Tubes, Boiler—
See Pipe.

Twine—

Flax Twine—	BC.	R.
No. 9, ¼ and ⅛ ℔ Balls	25¢	31¢
No. 12, ¼ and ⅛ ℔ Balls	22¢	30¢
No. 18, ¼ and ⅛ ℔ Balls	20¢	29¢
No. 24, ¼ and ⅛ ℔ Balls	20¢	29¢
No. 36, ¼ and ⅛ ℔ Balls	18¢	28¢

No. 364, Mattrass, ¼ and ⅛ ℔ Balls.53@54¢
Chalk Line, Cotton, ⅛ ℔ Balls.....25¢
Mason Line, Linen, ⅛ ℔ Balls.....55¢
2-Ply Hemp, ¼ and ⅛ ℔ Balls (Spring Twine).....15½¢
3-Ply Hemp, 1 ℔ Balls.....16@16½¢
3-Ply Hemp, 1½ ℔ Balls.....15@15½¢
Cotton Wrapping, 5 Balls to ℔ ..15@16¢
2, 3, 4 and 5-Ply Jute, ⅛ ℔ Balls.....10¢
Wool.....6½@6¾¢
Paper.....15@14¢
Cotton Mops, 6, 9, 12 and 15 ℔ to doz..18¢

Vises—
Solid Box.....50&10@50&10&25%
Parallel—
Fisher & Norris Double Screw.....15&10%
Stephens'.....35@30%
Parker's.....30@25%
Wilson's.....55%
Howard's.....40%
Bonney's.....40&10%
Millers Falls.....40@40&10%
Trenton.....40&25@40&10%
Merrill's.....15@20%
Sargent's.....60&10&10%
Backus and Union.....40%
Double Screw Leg.....15&10%
Prentiss.....30@25%
Simpson's Adjustable.....40%
Moore's.....30%
Massey Quick Action.....30 @ 25 %

Saw Filers—
Bonney's, Nos. 2 & 3, $15.00.....40&10%
Stearn's.....23½&10@33½&10&10%
Stearn's Silent Saw Vises.....33½@35%
Sargent's.....60%&10%
Hopkins'.....₩ doz $17.50, 10%
Reading.....40&10%
Wentworth.....20&10%

Miscellaneous.
Combination Hand Vises.....₩ gr $42.00
Cowell Hand Vises.....30%
Bauer's Pipe Vises.....10%
Cincinnati.....25&10%
Enterprise Pipe Vises, each.....$3.00
Massey Combination Pipe.....40 %

Wads—Price per M.

U.M.C.&W.R.A.—B.E., 11 up...	65¢
U.M.C.&W.R.A.—B.E., 9&10...	82¢
U.M.C.&W.R.A.—B.E., 8.....	96¢
U.M.C.&W.R.A.—B.E., 7.....	$1.10
U.M.C.&W.R.A.—P.E., 11 up..	1.15
U.M.C.&W.R.A.—P.E., 9&10..	1.50
U.M.C.&W.R.A.—P.E., 8.....	1.70
U.M.C.&W.R.A.—P.E., 7.....	1.80
Eley's B.E., 11 up.....$1.70@$1.75	
Eley's P.E., 11@10.....3.00@ 3.25	

Dis.50&2

Wagon Boxes—See Boxes, Wagon.

Washer Cutters—See Cutters Washer.

Wagon Jacks—See Jacks, Wagon.

Ware, Hollow, Enameled, &c.
Cast Iron, Hollow—
Stove Hollow-Ware—
Ground.....60&10%
Unground.....60&10&10%
White Enameled-Ware—
Maslin Kettles.....75@75&25%
Boilers and Saucepans.....50&10@60%
Tinned Boilers and Pans.....50&10@60%
Rustless Hollow-Ware.....50@50&25%
Gray Enameled-Ware—
Stove.....50%
Maslin Kettles.....50&10&10%
Boilers and Saucepans.....40&25%
Enameled—
Agate and Granite Ware, list Jan. 1, 1889.....23½&10%
Ironclad Enameled Ware...dis 23½&10%
Kettles—
Galvanized Tea-Kettles—

Inch....	6	7	8	9
Each....	55¢	60¢		75¢

Standard Fiber—

	Per Dozen. Plain.	Dec'r'd
Wash-Basins, 10½ in.....	$2.00	$2.28
Wash-Basins, 12 in.....	2.25	2.75
Keelers, 11¼ in.....		4.00
Cuspidors.....		3.00
Spittoons, "Daisy," 8 in....	4.00	4.50
Peck Measure.....	4.00	
Half-peck Measure.....	3.50	

See also Pails.
Indurated Fiber—35%
Spittoons, No. 2, ₩ doz.....$3.40
Basins, Ringed, ₩ doz., No. 2.....$3.00
Washtubs, Nested, Nos. 0, 1, 2 and 3 (4 pieces), ₩ nest.....$7.50
Keelers Nested, Nos. 1, 2, 3 and 4 (4 pieces), ₩ nest.....$2.90
Butter Bowls 15, 17 and 19-inch (3 pieces), ₩ nest.....$1.70
Liquid Measures, pt., qt., 2 qt. and funnell (4 pieces) ₩ doz.....$1.60
See also Pails.
Silver Plated, Hollow—
4 mo. or 5 % cash in 30 days.
Reed & Barton, Meriden Britannia Co, Simpson, Hall, Miller & Co, Rogers & Brother, Hartford Silver Plate Co } 40&25%
Hartford Silver Plate Co, William Rogers Mfg. Co } 40&25&25%

Washers—

Size hole.....	5-16	⅜	½	⅝ to 1⅜
Washers.....	6	5	3.50¢	3

In lots less than 200 ℔, ₩ ℔, add ¼¢, 5-℔ boxes 1¢ to list.

Wedges—
Iron.....₩ ℔ 3½¢
Steel.....₩ ℔ 3½¢

Weights, Sash—
Solid Eyes.....₩ ton $18@$19

Well Buckets, Galvanized—See Buckets, Well, Galvanized.

Wheels, Well.
8 in., $2.25; 10 in., $2.70; 12 in., $3.8

Wire and Wire Goods—
Iron—
Market, Br. & Ann., Nos. 0 to 18.....77½&5
Cop'd, Nos. 0 to 18.....75&5
Galv., Nos. 0 to 18.....67½&5
Tin'd, Tinned list Nos. 0 to 18.....67½&5
Stone, Br. and Ann'd, Nos. 16 to 18.....77½&5
Bright and Ann'd, Nos. 19 to 26.....80%
Br. and Ann'd, Nos. 27 to 36.....82½&5
Tinned.....
Tinned Broom Wire 18 to 21, ₩ ℔.....5¢
Galvanized Fence, Nos. 8 and 9.....70%
Brass, list Jan. 18, 1884.....35%
Copper, list Jan. 18, 1884.....35%
Annealed Wire on Spools.....60%
Malin's Steel and Tin'd on Spools.....60%
Malin's Brass and Cop. on Spools.....50%
Tate's Spooled, Tinned and Annealed.55%
Tate's Spooled Cop. and Brass.....45%
Cast Steel Wire.....50%
Stubs' Steel Wire.....$6.00 to $, 30%
Steel Music Wire, 12 to 30...60@70¢ ₩ ℔
Wire Clothes Lines, see Lines.
Wire Picture Cord see cord.

Bright Wire Goods—
Standard list.....30&10%

Wire Cloth and Netting.
Painted Screen Cloth, good quality ₩ 100 sq. ft., $1.40
Galvanized Wire Netting.....70&10@75%

Wire, Barb.—Prices unsettled. See Trade Report.

Wire Rope—See Rope, Wire.

Wrenches—
American Adjustable.....40%
Baxter's Adjustable "S".....40&10@50%
Baxter's Diagonal.....40&10@50%
Coes' Genuine.....50&25%
Coes' "Mechanics".....50&10&25%
Girard Standard.....65&10%
Lamson & Sessions' Engineers'..60&10%
Lamson & Sessions' Standard....70&10%
P. S. & W. Agricultural..... } 75&10@
Girard Agricultural..... } 70&10&25%
Lamson & Sessions' Agric'l.. }
Bemis & Call's Pat. Combination.....35%
Merrick's Pattern.....35%
Brigg's Pattern.....35%
Cylinder or Gas Pipe.....40&25%
No. 3 Pipe.....40&10%
Aiken's Pocket (Bright).....$6.00, 50&10%
The Favorite Pocket.....₩ doz $4.00, 40%
Webster's Pat. Combination.....35%
Boardman's.....30&10%
Always Ready.....35&25%
Alligator.....50%
Donohue's Engineer.....30&10%
Acme, Bright.....50&25%
Acme, Nickeled.....40&25%
Hercules.....70%
Walker's.....55&25%
Diamond Steel.....55&25%
Cincinnati Brace Wrenches.....35&10%
Tafts' Vise Wrench.....55&10&25%

Wringers, Clothes—
Am Wringer Co.'s list, July 15, 91..2% cash
Colby Wringer Co., list Sept. 1, '91 2% cash
Lovell Mfg. Co., list Jan. 1, 1892 2 % cash

Wrought Goods—
Staples, Hooks, &c., list Jan. 12, 1886, 35@35&1

PAINTS, OILS AND COLORS.—Wholesale Prices.

Animal and Vegetable Oils.

Linseed, City, raw..per gal.	37	@	..
Linseed, City, boiled.....	40	@	..
Linseed, Western, raw.....	35	@	..
Lard, City, Extra Winter..	56	@	57
Lard, City, Prime.....	55	@	56
Lard, City, Extra No. 1....	44	@	45
Lard, City, No. 1.....	41	@	42
Lard, Western, prime.....	54	@	55
Cotton-seed, Crude, prime.	25	@	25¼
Cotton-seed, Crude, off grades.....	22½@		23½
Cotton-seed, Summer Yellow, prime.....	29	@	29½
Cotton-seed, Summer Yellow, off grades.....	27½@		28¼
Sperm, Crude.....	70	@	71
Sperm, Natural Spring.....	67	@	70
Sperm, Bleached Spring....	73	@	75
Sperm, Natural Winter.....	73	@	76
Sperm, Bleached Winter....	78	@	81
Whale, Crude.....	..	@	45
Whale, Natural Winter.....	54	@	55
Whale, Bleached Winter....	57	@	58
Whale, Extra Bleached.....	59	@	60
Sea Elephant, Bleached Winter.....	62	@	63
Menhaden, Crude, Sound...	30	@	32
Menhaden, Crude, Southern	..	@	..
Menhaden, Light Pressed..	37	@	38
Menhaden, Bleached W'ter.	38	@	39
Menhaden, Extra Bleached	40	@	42
Tallow, City, prime.....	44	@	45
Tallow, Western, prime....	42½@		43
Cocoanut, Ceylon.....	5½@		5¾
Cocoanut, Cochin.....	6¼@		6¾
Cod, Domestic.....	38	@	40
Cod, Foreign.....	42	@	44
Red Elaine.....	34	@	36
Red Saponified.....₩ ℔	4½@		5
Bank.....per gal	35	@	36
Straits.....	36	@	37
Olive, Italian, bbls.....	60	@	63
Neatsfoot, prime.....	55	@	65
Palm, prime, Lagos....₩ ℔	6	@	6½

Mineral Oils.

Black, 29 gravity, 25 @ 30 cold test.....per gal	7	@	7½
Black, 29 gravity, 15 cold test.....	8	@	8½
Black, 29 gravity, summer.	6	@	6½
Cylinder light, filtered....	15	@	
Cylinder, dark, filtered	12	@	15
Paraffine, 23½ @ 24 gravity.	13½@		14
Paraffine, 25 gravity.....	12½@		13
Paraffine, 28 gravity.....	8	@	..½
Paraffine, red, 23½@24 gr'ty	13	@	15

Paints and Colors.

Barytes, Foreign, ₩ ton.	$22.00	@	$24.00
Barytes, Amer. floated...	30.00	@	$32.00
Barytes, Amer. No. 1....	19.00	@	20.00
Barytes, Amer. No. 2....	13.00	@	16.00
Barytes, Amer., No. 3....	11.00	@	12.00
Blue, Celestial.....₩ ℔	6	@	8
Blue, Chinese.....	40	@	50
Blue Prussian.....	25	@	40
Blue, Ultramarine.....	8	@	25
Brown, Spanish.....	½@		1
Brown, Vandyke, Amer..	2	@	3½
Brown, Vandyke, English	6	@	8
Carmine, No. 40, in bulk.	3.10	@	..
Carmine, No. 40, in boxes or barrels.....	3.20	@	
Carmine, No. 40, in ounce bottles.....	4.20	@	
Chalk, in bulk.....₩ ton.	2.00	@	.01
Chalk, in bbls..₩ 100 ℔.	33	@	40
China Clay, English..... ₩ ton.	18.00	@	18.00
Cobalt Oxide, prep'd....	9.00	@	11.00
Cobalt Oxide, black.. lots 100 ℔.	3.50	@	....
Cobalt, Oxide, black..... less 100 ℔.	2.65	@	2.90
Green, Paris, in bulk.....	14	@	15½
Green Paris, 170 @ 175 ℔ kegs.....	14½@		15¾
Green, Paris, small pack.	16	@	21¾
Green, Chrome, ordinary	6	@	13
Green, Chrome, pure..	22	@	35
Lead, Eng., B.B. white....	8½@		10
Lead, Amn. White, dry or in oil— Kegs, lots less than 500 ℔...	7¼	@	7½
Kegs, lots 500 ℔ to 5 tons...	6¾	@	7
Kegs, lots 5 tons to 12 tons..	6¾	@	6¾
Kegs, lots 12 tons and over..	6½	@	6¾
Lead, White in oil 25 ℔ tin pails add to keg price.....		@	⅛
Lead, White, in oil, 12½ ℔ tin pails, add to keg price		@	¼
Lead, White, in oil, 1 to 5 ℔ assorted tins, add to keg price.		@	2½
Lead, Red, bbls. and ½ bbls....	6¼	@	7¼
Lead, Red, kegs.....	6¾	@	7¾
Litharge, kegs.....	6¼	@	7½
Litharge, bbls. and ½ bbls.....	6¼	@	7¼

TERMS, &c.—Lead and Litharge.—On lots of 500 ℔ or over, 60 days' time or 2½ % discount for cash if paid within 15 days of date of invoice.

Ocher, Rochelle.....	1.25	@	1½
Ocher, French Washed.....	1½@		2½
Ocher, German Washed...	1½@		2
Ocher, American.....	½@		1½
Orange Mineral, English...	8½@		9
Orange Mineral, French....	10	@	10½
Orange Mineral, German ..	8½@		09
Orange Mineral, American.	8	@	8½
Paris White, English Cliff-stone.....	1.00	@	1.15
Paris White, American....	70	@	75
Red, Indian, English.....	5½@		7
Red, Indian, American....	2	@	6½
Red, Turkey.....	9	@	14
Red, Tuscan.....	9	@	11
Red, Venetian, American.. ₩ 100 ℔.	1.00	@	1.25
Red, Venetian, English....	1.00	@	1.50
Sienna, Italian, Burnt and Powd.₩ ℔.....	4	@	5
Sienna, Ital., Burnt Lumps	1¼@		3½
Sienna, Ital., Raw, Powd..	4½@		5½
Sienna, Ital., Raw Lumps..	1¾@		3½
Sienna, American, Raw....	1¼@		1¾
Sienna, American, Burnt and Powdered.....	1½@		1¾
Talc, French.....	1½@		1¾
Talc, American.....	1	@	1¼
Terra Alba, Fr'ch. ₩ 100 ℔	75	@	80
Terra Alba, English	80	@	90
Terra Alba, American No.1	70	@	75
Terra Alba, American No.2	45	@	50
Umber, Turkey, Bnt. and Powd.....₩ ℔	3½@		4
Umber, Turkey Bnt.La	2½@		3
Umber, Turkey, Raw and Powdered.....	3½@		
Umber Turkey, R'w Lmps	2½@		3½
Umber, Turkey, Bnt. Amer.	1½@		1¾
Umber, Turkey, R'w Amer.	1½@		1¾
Yellow, Chrome.....	10	@	25
Vermilion Americ. Lead..	11½@		17
Vermilion, Quicks'er, bulk.	64	@	66
Vermilion, Quicks'er, bags.	65	@	67
Vermilion Quicksilver, smaller pkgs.....	60	@	73
Vermilion English Imported	85	@	90
Vermilion, Imitation, Eng.	8	@	25
Vermilion, Trieste.....	90	@	92½
Vermilion, Chinese.....	92½@		98
Whiting, Common, ₩ 100 ℔	40	@	45
Whiting, Gilders'.....	55	@	65
Zinc, American, dry....₩ ℔	4½@		5
Zinc, French, Red Seal.....	..	@	5½
Zinc, French, Green Seal..	..	@	5½
Zinc, French, V. M. X.....	..	@	7
Zinc, Antwerp, Red Seal....	..	@	7½
Zinc, Antwerp, Green Seal	..	@	8½
Zinc, German, L. Z. O....	..	@	6½
Zinc, V M. in Poppy Oil, G. Seal, lots of 1 ton and over.....	10½@		11¼
lots less than 1 ton	11	@	11¾
Zinc, V. M. in Poppy Oil, Red Seal.....	..	@	..
lots of 1 ton and over....	10	@	10¼
Lots of less than 1 ton....	10¼@		10¾

Discounts.—French Zinc.—Discounts to buyers of 10- bbl. lots of one or assorted grades, 1 %; 25 bbls. 2 %, 50 bbls, 4 %. No discount allowed on less than bbl. lots.

Colors in Oil.

Black, Drop, Frank'fort	25	@	30
Black, Dro., English	12	@	15
Black, Drop, Dom stic	7	@	10
Black, Lampbla k, best	20	@	25
Black, Lampblack, Common	7	@	12
Black, Ivory.....	5	@	15
Blue, Chinese.....	30	@	35
Blue, Prussian.....	20	@	45
Blue, Ultramarine.....	12	@	18
Brown, Vandyke.....	7	@	12
Green, Chrome.....	8	@	13
Green, Paris.....	16	@	18¼
Sienna, Raw.....	7	@	14
Sienna, Burnt.....	7	@	14
Umber Raw.....	7	@	10
Umber, Burnt	7	@	10

Putty.

In barrels and ½ bbls....	.01½@		.01¾
In tubs.....	.01¾@		.01¾
In tin cans.....	.01¾@		.02¼
In bladders.....	.01½@		.02¼

Spirits Turpentine.

In regular bbls.....	34	@	..
In machine bbls.....	34½@		

Glue.

Low Grade.....₩ ℔	8	@	10
Cabinet.....	12	@	14
Medium White.....	13	@	15
Extra White.....	17	@	20
French.....	10	@	22
English.....	10	@	15
Irish.....	13	@	

CURRENT METAL PRICES.

FEBRUARY 10, 1892.

The following quotations are for small lots. Wholesale prices, at which large lots only can be bought, are given elsewhere in our weekly market reports

IRON AND STEEL.

Bar Iron from Store.

Common Iron:	
⅜ to 2 in. round and square.. 1 to 6 in. x ⅜ to 1 in...	₩ lb 1.90 @ 2.00¢
Refined Iron:	
⅜ to 2 in. round and square. 1 to 4 in. x ⅜ to 1½ in.... 4½ to 6 in. x ⅜ to 1 in.	₩ lb 2.00 @ 2.20¢
1 to 6 in. x ¼ and 5-16	₩ lb 2.20 @ 2.40¢
Rods—⅜ and 11-16 round and sq.	₩ lb 2.10 @ 2.30¢
Bands—1 to 6 x 3-16 to No. 12	₩ lb 2.30 @ 2.50¢
"Burden Best" Iron, base price.	₩ lb 3.00¢
Burden's "H. B. & S." Iron, base price	₩ lb 2.80¢
"Ulster"	₩ lb 3.00¢
Norway Bars	3.75 @ 4.00¢
Norway Shapes	4.50 @ 5.00¢

Merchant Steel from Store.

	Per pound
Open-Hearth and Bessemer Machinery, Toe Calk, Tire and Sleigh Shoe, base price in small lots	2¾¢
Best Cast Steel, base price in small lots	8 ¢
Best Cast Steel Machinery, base price in small lots	5 ¢

Sheet Iron from Store.

	Common American.		R. G.	Cleaned.
10 to 16	₩ lb 2.75	@ 3.00¢	3.35	@ ¢
17 to 20	₩ lb 3.00	@ 3.25¢	3.35	@ 3.75 ¢
21 to 24	₩ lb 3.35	@ 3.35¢	3.60	@ ¢
25 and 26	₩ lb 3.35	@	3.60	@ ¢
27	₩ lb 3 50	@ 3.62½¢	3.85	@ ¢
28	₩ lb 3.65	@ ¢	4.10	@ ¢
	B. B.			2d qual.
Galv'd, 14 to 20,	₩ lb, 4.75	@	4.60	@ ¢
Galv'd, 21 to 24,	₩ lb, 5.12	@	5 00	@ ¢
Galv'd, 25 to 26,	₩ lb, 5.50	@	5.35	@ ¢
Galv'd, 27	₩ lb, 5.90	@	5.70	@ ¢
Galv'd, 28	₩ lb, 6.25	@	6.10	@ ¢
Patent Planished	₩ lb A 10¢			B, 9¢
Russia	₩ lb 10½¢ @ 11¢			
American Cold Rolled R. B.	₩ lb 5¢ @ 7¢			
Craig Polished Sheet steel	₩ lb, 8½¢			

English Steel from Store.

Best Cast	₩ lb 15 ¢
Extra Cast	₩ lb 16½ @ 17 ¢
Swaged Cast	₩ lb 16 ¢
Best Double Shear	₩ lb 15 ¢
Blister, 1st quality	₩ lb 12 ¢
German Steel, Best	₩ lb 10 ¢
2d quality	₩ lb 9 ¢
3d quality	₩ lb 8 ¢
Sheet Cast Steel, 1st quality	₩ lb 15 ¢
2d quality	₩ lb 14 ¢
3d quality	₩ lb 12½¢
R. Mushet's "Special"	₩ lb 48 ¢
" " "Titanic"	₩ lb 20 ¢

METALS.

Tin.

	Per lb
Banca, Pigs	22 @22¼¢
Straits, Pigs	21 @21 ⅛¢
Straits in Bars	23 ¢

Tin Plates.

Charcoal Plates.—Bright.

				Per box.
Melyn Grade	IC,	10 x 14		@ $6.60
" "	IC,	12 x 12		@ 6.85
" "	IC,	14 x 20		@ 6.60
" "	IC,	20 x 28		@ 13.40
" "	IX,	10 x 14		@ 8.25
" "	IX,	12 x 12		@ 8.50
" "	IX,	14 x 20		@ 8.25
" "	IX,	20 x 28		@ 16.50
" "	DC,	12½ x 17		@ 6.25
" "	DX,	12½ x 17		@ 7.75
Calland Grade	IC,	10 x 14		@ 6.70
" "	IC,	12 x 12		@ 6 95
" "	IC,	14 x 20		@ 6.60
" "	IX,	10 x 14		@ 7.85
" "	IX,	12 x 12		@ 8.20
" "	IX,	14 x 20		@ 7.8
Allaway Grade	IC,	10 x 14		@ 6.35
" "	IC,	12 x 12		@ 6.50
" "	IC,	14 x 20		@ 6.35
" "	IC,	20 x 28		@ 12.40
"	IX,	10 x 14		@ 7.50
"	IX,	12 x 12		@ 7.80
"	IX,	14 x 20		@ 7.50
"	IX,	20 x 28		@ 15.00
"	DC,	12½ x 17		@ 6.80
"	DX,	12⅝ x 17	6.00	@ 7.00

Coke Plates.—Bright.

Steel Coke.—IC,	10 x 14, 14 x 20		@	$5.70
	10 x 20		@	8.10
	20 x 28		@	11 70
	IX, 10 x 14, 14 x 20		@	6.60
BV Grade.—IC,	10 x 14, 14 x 20		@	5.70

Charcoal Plates.—Terne.

Dean Grade.—IC,	14 x 20		@	$5.75
	20 x 28		@	10.75
	IX, 14 x 20		@	6.87½
	20 x 28		@	12.75
Abecarne Grade.—IC,	14 x 20		@	5 50
	20 x 28		@	10 75
	IX 14 x 20		@	6 50
	x 28		@	12 50

Tin Boiler Plates.

IXX, 14 x 28	112 sheets	@ $13.50
IXX, 14 x 28	112 sheets	@ 13.75
IXX, 14 x 31	112 sheets	@ 15.25

Copper.

DUTY: Pig, Bar and Ingot, 1½¢; Old Copper, 1¢ ₩ lb. Manufactured (including all articles of which Copper is a component of chief value), 35 ⅌ ad valorem.

Ingot

Lake	@ 11¾¢
Ansonia Grade Arizona	@ 11 ¢
Ansonia Grade Casting	@ 10¾¢

Sheet and Bolt.

Prices adopted by the Association of Copper Manufacturers of the United States, December 5, 1891. Subject to a discount of 10 ⅌ @ 20 ⅌, according to size of order.

Not wider than	Not longer than	And longer than	Weights per square foot and prices per pound. Over 64 oz.	32 to 64 oz.	16 to 32 oz.	14 to 16 oz.	12 to 14 oz.	10 to 12 oz.	8 to 10 oz.	Less than 8 oz.
30	72		22	23	24	25	26	28	30	
30		72	22	23	24	25	27	31		
36	96		22	23	24	26	30	33		
36		96	22	23	25	27	31	35		
48	96		22	24	26	28	32			
48		96	22	25	27	29	33			
60	96		23	26	27	29	34			
60		96	23	26	28					
84	96		23	24						
84		96	24	25						
Over 84 in. wide			25	27						

Bolt Copper, ⅜ inch diameter and over, per pound 22¢

Circles, 60 inches in diameter and less, 3 cents per pound advance over lowest prices of Sheet Copper of the same thickness.

Copper Bottoms, Pits and Flats.

	Per pound
14 ounce to square foot and heavier	26¢
12 ounce and up to 14 ounce to square foot	27¢
10 ounce and up to 12 ounce	29¢
Lighter than 10 ounce	32¢

Circles less than 8 inches diameter 2 cents per pound additional.

Circles over 13 inches diameter are not classed as Copper Bottoms.

— ⅌ discount.

Tinning.

Not.

Tinning sheets on one side, 10, 12 and 14 x 48 each	3¢
Tinning sheets on one side, 30 x 60 each	30¢
For tinning boiler sizes, 9 in. (sheets 14 in. x 60 in.), each	15¢
For tinning boiler sizes, 8 in. (sheets 14 in. x 56 in.), each	12¢
For tinning boiler sizes, 7 in. (sheets 14 in. x 52 in.) each	12¢
Tinning sheets on one side, other sizes, per square foot	2½¢
For tinning both sides double the above prices.	

Planished Brass and Copper.

Not larger than 30 x 60.

16 oz. and heavier	24¢ ₩ lb
14 oz.	25¢ ₩ lb
12 oz.	27¢ ₩ lb

Seamless Brass Tubes.

Net.

Dec. 16, 1891.

O. G.	N. G.	⅛	¼	⅜	½	⅝	¾	1	1¼
5-14	6-12	30	26	23	22	21	20	17	
15	13	31	26	24	23	22	21	18	
16	14	32	27	25	24	23	22	18	
17	15	33	28	26	25	24	23	19	
18	16	34	29	27	26	24	24	20	
19	17	36	30	28	27	24	25	22	
20	18-19	37	32	30	29	28	27	24	
21	20	39	34	32	31	30	29	27	
22	21	41	35	34	32	31	30	29	
23	22	43	37	35	34	33	32	32	
24	23	46	39	37	36	34	35	34	
25	24	49	44	39	38	37	36	38	

Copper Tubes, 3¢ ₩ lb additional.

Copper Bronze and Gilding Tube, 3¢ ₩ lb additional

Brazed Brass Tubing. (To No. 20, inclusive.

Above 5-16 inch to 3 inch, inclusive	35¢
Plain, above 3 inch	45¢
Plain, 5-16 inch	45¢
Plain, ¼ inch	60¢
Plain, 5-16 inch	81.00
Plain, ⅛ inch	1.50
Fancy Tubing, Brass, to No. 20, inclusive	45¢ ₩ ft
Bronze Tubing, 5¢ ₩ lb more than Brass.	
Discount from list	30 @ ⅌

Roll and Sheet Brass.

(*Brown & Sharpe Standard Gauge.*)

Common High Brass: Wider than and including	in. 2	in. 10	in. 12	in. 14	in. 16	in. 18	in. 20	in. 22	in. 24
	10	12	14	16	18	20	22	24	
To No. 20, inclusive	.21	.22	.23	.25	.27	.29	.31	.33	
Nos. 21, 22, 23 and 24	.22	.23	.24	.26	.28	.30	.32	.34	
Nos. 25 and 26	.22½	.23½	.24½	.27	.29	.31	.33	.35	
Nos. 27 and 28	.23	.24	.25	.28	.30	.32	.34	.36	
Common High Brass: Wider than and including	in. 24 26	in. 26 28	in. 28 30	in. 30 32	in. 32 34	in. 34 36	in. 36 38	in. 38 40	
To No. 20, inclusive	.36	.39	.42	.46	.50	.55	.60	.65	
Nos. 21, 22, 23 and 24	.37	.40	.43	.47	.51	.56	.61	.66	
Nos. 25 and 26	.38	.41	.44	.48	.52	.57	.63	.71	
Nos. 27 and 28	.39	.42	.45	.49	.53	.58	.65	.73	

Discount from List 10 ⅌ @ 25 ⅌.

Brass and Copper Wire.

List January 17, 1884.

Numbered by Stubs' gauge.	Soft & hard high brass.	Spring high brass.	Low brass.	Copper.
All Nos. to No. 16, inclusive	$0.22	$0.24	$0 26	$0.30
No. 17 and No. 18	.23	.25	.27	.31
No. 19 " " 20	.24	.26	.28	.32
No. 21, or 0.032 diam	.25	.27	.29	.33

Discount 10 ⅌ @ 25 ⅌.

Fine Numbers.

Numbered by London gauge.	Brass.	Spring high brass.	Low brass.	Copper.
No. 22	$0.26	$0.28	$0 30	$0 34
No. 23	.28	.30	.32	.36
No. 24	.30	.32	.34	.38
No. 25	.32	.34	.36	.40
No. 26	.35	.37	.39	.43
No. 27	.38	.40	.42	.46
No. 28	.42	.44	.46	.51
No. 29	.45	.47	.49	.54
No. 30	.48	.50	.52	.57
No. 31	.51	.53	.55	.62
No. 32	.55	.57	.59	.73
No. 33	.59	.61	.63	.82
No. 34	.64	.66	.68	.96
No. 35	.70	.72	.74	1.30
No. 36	.76	.78	.80	1.50
No. 37	1.00	1.02	1.04	1.70
No. 38	1.30	1.32	1.34	2.00
No. 39	2.00	2.02	2.00	3.25
No. 40	2.60	2.62	2.60	5.75

— ⅌ discount.

Spring Wire, 2¢ ₩ lb advance.

Copper Belt and Hose Rivets and Burrs.

Per lb.		Per lb.
No. 5	49¢	No. 11 56¢
No. 6	49¢	No. 12 58¢
No. 7	49¢	No. 13 60¢
No. 8	50¢	No. 14 62¢
No. 9	52¢	No 15 70¢
No 10	54¢	

60 ⅌ @ 10 ⅌ discount.

Tobin Bronze—Rods.

Drawn Rods for Bolts, Forgings, &c.

¼ to ⅝ inch inclusive	17¢ ₩ lb
Over ⅝ to 3½ inches inclusive	18¢ ₩ lb
Over 3½ to 5 inches inclusive	17¢ ₩ lb

Piston Rods, Finished True, Smooth and Straight.

¼ to ⅜ inch inclusive	17¢ ₩ lb
Over ⅜ to 2 inches inclusive	17¢ ₩ lb
Over 2 to 3½ inches inclusive	18¢ ₩ lb
Over 3½ to 5 inches inclusive	19¢ ₩ lb

Spelter.

Duty: Pig, Bars and Plates, $1.50 ₩ 100 lb.

Western Spelter	6¢
Bertha (pure)	8¾¢ @ 9 ¢

Zinc.

Duty: Sheet, 2½¢ ₩ lb.

600 lb casks	7¼¢
Per lb	7¾¢

Lead.

Duty: Pig, $2 ₩ 100 lb. Old Lead, 2¢ ₩ lb. Pipe and Sheets, 2½¢ ₩ lb.

American	4½¢
Bar	5½¢
Pipe, subject to trade discount	6½¢
Tin-Lined Pipe, subject to trade discount	15
Block Tin Pipes, subject to trade discount	37½¢
Sheet, subject to trade discount	7¢

Solder.

½ @ ½ (Guaranteed)	14¢
No. 1	11¼¢
Extra Wiping	11¢

The prices of the many other qualities of Solder in the market indicated by private brands vary according to composition.

Antimony.

Cookson	₩ lb 16 @ 1 6½¢
Hallett's	" @ 13½¢

ALUMINUM.

Prices Per Ton.

Over 98 ⅌ pure	₩ lb .75
94 ⅌ @ 98 ⅌ pure	₩ lb .65

Old Metals.

Prices Paid in New York.

Heavy Copper	₩ lb 10 ¢
Light Copper	₩ lb 9 ¢
Heavy Brass	₩ lb 7 ¢
Light Brass	₩ lb 6 ¢
Lead	₩ lb 3½¢
Tea Lead	₩ lb 3½¢
Zinc	₩ lb 2½¢
No. 1 Pewter	₩ lb 14 ¢
No 2 Pewter	₩ lb 7 ¢
Wrought Scrap Iron	₩ gross ton $17.00
Heavy Cast Scrap	₩ gross ton 10.00
Stove Plate Scrap	₩ gross ton 7.00
Burnt Iron	₩ gross ton 5.00